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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and to improve the character of the service rendered to the public.

PRESIDENT.

WM. LIVINGSTONE, Detroit.

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GIBSON L. DOUGLAS, Chairman, Buffalo.

COMMITTEE ON AIDS TO NAVIGATION.

GEORGE P. MCKAY, Chairman, Cleveland.

RESOLUTIONS OF CONDOLENCE.

At a meeting of the executive committee of the Lake Carriers' Association held on Thursday, May 15, in respect for the memory of the late Patrick Smith, the following was adopted:

"We have learned with sorrow of the sudden death of Patick Smith, one of the prominent figures in the affairs of the Great Lakes. Mr. Smith came at an early day into the communnity, and has through a long, active and useful career been prominent in all enterprises that tend to make navigation more safe and practicable, and has accordingly been of great service to the commercial interests of the Great Lakes. At an early age he applied his energies to the dredging business, and has done much to widen and deepen many of the harbors and channels of the lake ports. The tug business also came within the range of his activities, and he established one of the earliest tug services, which until recent years was prominent in that form of enterprise. For many years he was an active and useful member of this association. Mr. Smith had a sunny, philosophic disposition, a generous nature, and an upright character, standing in the business world as an apostle of industry, sobriety, and rectitude; therefore, be it.

"Resolved, That in the death of Patrick Smith the association has lost an esteemed and honored friend, whose personal worth commanded our admiration and respect; that we extend our sympathy to his family in their bereavement; that these resolutions be spread upon the minutes of the association, and that a copy thereof be transmitted to the family of Mr. Smith."

A meeting of the Lake Carriers' Association held in the offices of Capt. James Corrigan, on Thursday, May 15, to take action upon the death of Capt. J. T. Hutchinson. The following resolutions were adopted:

"Like a thunder clap out of a clear sky came the news of the death of our esteemed associate, Capt. John T. Hutchinson, who was called hence while doing business in his office yesterday afternoon. During his entire business life Capt. Hutchinson had been identified with lake marine. His first investment was made in the early seventies in the schooner Ellen White, and gradually developed up to the building of one of the largest and most modern steel steamers on the lakes, which was launched last year, and which now bears his name. He was a member of the old Cleveland Vessel Owners' Association, and was also a member of this association since its organization.

"Resolved, That in the death of Capt. Hutchinson this association has lost one of its most faithful and valued members; a man in whom we all had implicit confidence and upon whom we relied for his wise counsel and advice, and we extend our heartfelt sympathy to his family in their bereavement.

"Resolved, That these resolutions be spread upon the minutes of the association, and a copy be transmitted to the family."

CANADIAN-UNITED STATES COMMERCE.

Canada continues to increase her purchases from the United States, despite the tariff advantages accorded Great Britain in the fiscal system of that country. During the nine months of the present fiscal year for which details are available, British North America showed a larger increase in its purchases from the United States than any other political division of America, as compared with those of the corresponding periods of 1900 and 1901 Our total exports to British North America increased from $69,763,595 in the nine months of 1900, and $77,894,-138 in the same period of 1901 to $80,999,004 in the corresponding months of the current year.

To Mexico, the increase during the same period compared with that of last year was but two million dollars and to the West Indies one million dollars. while the Central American states showed a decrease of about $300,000 and South American about $4,000,000 in their purchases from the United States during the nine months of the present fiscal year as compared with the same period of the preceeding year.

The continued growth in our commerce with Canada is the most remarkable when it is remembered that ever since April 1897 the United Kingdom has enjoyed tariff advantages in the Canadian market, the discrimination in her favor having ranged from 12½ per cent. in that year to 33 1-3 per cent. from and after July 1, 1900. Yet the exports from the United States to British North America have increased year by year, and our total exports to that market in the nine months under review are $11,235,409, or 16 per cent. in excess of those for the same period of 1900, and $3,104,866, or 4 per cent. in excess of those of the corresponding months of last year.

A comparison of our exports to Canada in the first nine months of the present fiscal year with those of the corresponding months immediately preceeding the reduction in the Canadian tariff in favor of Great Britain shows that our exports to Canada meantime have increased about 75 per cent., being for the earlier period $46,752,958, and for the nine months ending with March, 1902, $80,-999,004.

ANOTHER LIFE RAFT.

Capt. F. P. Houghton, master of the steel cargo steamer James J. Hill, owned by the Pittsburgh Steamship Co., is the inventor of a new life float that is said to bid fair to place him on easy street, and permit him to retire from active service on the lakes.

A Duluth paper says the appliance is called the Carley life float, and a company has been organized in Boston to manufacture it. Capt. Houghton, on his last trip to Duluth, brought a model of the float, which has been hung up in the office of the local steamboat inspectors, and which has attracted much attention from the marine men.

The floats are built in sizes of 5 by 8 feet, capable of holding seventeen persons and 10 by 18 feet, capable of holding seventy-five people. They are constructed of copper tubing, varying in diameter according to the size of the float, which lies on the water in the form of an elipse. The tubing is in one foot sections, covered with a layer of cork, wound with copper wire, and the whole covered with canvass. Attached to the tubing by a strong netting is a wooden or metallic platform, while long ropes held to the surface by wooden floats radiate from the top of the netting.

In case of an accident, it is claimed that two men can easily launch the largest float. It makes no difference how it is thrown in the water, for the platform hangs equally well from either side. Oars are tied to the sides of the float.

Capt. Houghton says that the merits of his life float above the ordinary life raft are many. It is not nearly so heavy, hence more easily handled than a life raft. Furthermore, when persons are once inside of it there is no danger of their being washed away, even if too exhausted to cling to the float. It has been tried with success by the navy, and accompanying the model are numerous photographs showing sailors experimenting with it.

The new float may be all that is claimed for it, but from the foregoing description it would appear to be of very expensive construction and consequently of special rather than ordinary use and application.

DISTRIBUTION OF MAGNETIC NEEDLES.

Mr. Otto H. Tittmann, superintendent of the United States Coast and Geodetic Survey, Washington, reports that the delicately suspended magnetic needles at the two coast and geodetic survey magnetic observatories, the one situated at Cheltenham, Md., sixteen miles southeast of Washington, and the other at Baldwin, Kan., seventeen miles south of Lawrence, were disturbed beginning at about the time the catastrophe at St. Pierre is reported to have occurred.

The wave of fire struck St. Pierre about 8 o'clock a. m., May 8, and a clock was stopped at 7:50. The magnetic disturbance began at the Cheltenham observatory at a time corresponding to 7:53 St. Pierre local mean time and at the Baldwin observatory 7:55 St. Pierre time.

The delicate apparatus installed at these observatories is so arranged that it registers automatically, by photographic means, the minutest variations in the direction and intensity of the earth's magnetic force. It is a noteworthy fact that no seismological observatory has thus far reported a seismic disturbance during the eruption.

Up to the present time no magnetic effects due to eruptions of the distant volcanoes have ever been recognized at magnetic observatories.

NORTH POLE EXPEDITION.

The Canadian government has been asked to grant an appropriation to Capt. Bernier, in aid of his proposed expedition to the North Pole. Mr. Charlton proceeded to recount the record of polar expeditions, concluding with those of Perry and Baldwin, who, he feared, might succeed in reaching the Pole before Capt. Bernier got there, if Canada did not hurry up.

Canadians were peculiarly fitted for the task, by reason of their experience in exploration and familiarity with and fondness for adventure. Capt. Bernier was admirably fitted for the task of commanding a polar expedition. He was of the race of La Salle, and had the courage and perseverance to get to the North Pole if the government would give him the necessary assistance. In the course of his reference to Capt. Bernier's qualifications, he mentioned that he was 50 years of age, had commanded a vessel at the age of 17, had been master of 46 ships and never lost but one, and had crossed the Atlantic 174 times.

His plan was to proceed by way of Behring Strait and sail north till he encountered the ice-pack. He would enter the ice pack between 170 and 175 degrees west longitude and drift with it to within 150 miles of the Pole. During the voyage he would at intervals send out sled parties for 50 miles on each side of the ship to reconnoiter. Then, when at the northernmost point to which the current would carry the ship, he would make a dash for the goal. It was proposed to use dog sledges and an automobile sledge.

He would also carry Marconi instruments, so that his sledge parties would be in convenient communication with the ship, and the ship in communication with Dawson City. Besides, he would use a new instrument, contrived to point in the direction of a similar instrument, so that the parties would always know the direction of each other and the bearing of the ship.

As for expenses Capt. Bernier had secured subscriptions of $20,000, and would require $100,000.

A POWERFUL COAST LIGHT.

The new light-house on La Vierge Island, of the coast of Brittany, which was commenced on July 1897, and lighted on March 1st, ranks among the most remarkable light towers in the world. The total height is 426 feet, of which 420 feet is masonry, while the diameter at the base is 55 feet. In clear weather the range will be 39 miles. The light, a white flash every five seconds, will combine with that of Ushant. It is near the port of Abervrach, a French torpedo boat station. The light-house it displaces had a height of 79 feet, and a power of 224 carcel candles, against the 56,000 carcel candle power of the new light. The next highest light-house on the French coast, which is one of the best lighted in the world, is that of Barfleur-Gatteville, which has a height of 413 feet.

AROUND THE LAKES

CHICAGO.

The new steel cargo steamer Milwaukee of the Western Transit Line, recently launched from the South Chicago yards of the American Ship Building Co., will be ready to go into service June 10. She will proceed direct to Buffalo on her first trip.

Charters were made on Monday for 310,000 bushels of corn and 100,000 bushels of oats. Boats were offered more freely than for a week, having come from outside ports for loads. There is a possibility of over 1,000,000 bushels of corn being loaded out this week, of which 500,000 is already under charter.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, Chicago, for the week ending May 21st. Prevailing wind direction for the week N.E.; highest velocity 38 miles, from the S.E. on the 18th; mean temperature for the week, 64; highest temperature 86 on the 18th; lowest, 45 on the 15th.

An enormous timber land has just been closed at Milwaukee betwen the John Schroeder Lumber Co. and E. B. Simpson, of Milwaukee. Mr. Simpson represents the Interstate Land and Lumber Co., a Wisconsin corporation, which has sold 200,000,000 feet of fir located in the Nehalem country and over in the state of Washington, adjacent to the Columbia river.

The Lydon & Drews Construction Co.,of Chicago, have just accomplished a feat unprecedented in pier work. Three cribs, each 100 feet in length, have been sunk and placed in position in 18 days. The fourth crib will be in position before the end of the month. Last year, during the entire season, only six cribs were sunk. The company expects to finish this big contract at St. Joseph by Nov. 1.

The big steamer Mauch Chunk, the largest boat that ever went up the north branch of the Chicago river, came out of the Shipowner's Dry-dock after extensive repairs to her bottom plates and frames. The damages to the Mauch Chunk cost over $20,000 to repair, and were inflicted at the Limekiln nearly a month ago. The steamer City of Berlin will take the berth just vacated by the Mauch Chunk and will have her deck raised. This will increase her carrying capacity.

The charter of the steamer Manitou has been made for a round trip to Duluth, the north and south shores of Lake Superior, and the copper country, by the Retail Coal Dealers' Association, of Illinois and Wisconsin. A special train will carry the party into the copper mining districts, and the underground workings will be shown as they have never been shown before. This is the third annual excursion taken by the retail coal men on the Manitou. The start will be made from Chicago, June 12, and the trip will require eight days.

Eastbound shipments of flour from Chicago last week by the all-rail routes were the lightest in nearly a year. Grain shipments, on the other hand, were the heaviest in 12 weeks, and provision shipments were the lightest in four weeks. Flour shipments consisted of 56,697 barrels, a decrease of 1,624 barrels from the previous week, and of 37,797 barrels from those of the corresponding week last year. Grain shipments for the week were 1,530,000 bushels, an increase of 158,000 bushels over the previous week, but a decrease of 565,000 bushels from the corresing week last year. Shipments of provisions were 23,055 tons, a decrease of 1,170 tons from the previous week, and an increase of 1,773 tons as compared with the corresponding week last year.

During the dense fog which hung over Lake Michigan on Wednesday, the steamer Colgate Hoyt and whaleback barge 202, which she had in tow, stranded off Glenncoe, about twenty miles north of Chicago. The captain made made his way to shore in a small boat, and communicated the news of the disaster to Capt. D. Sullivan, local agent of the boats. The two vessels are on a sandy bottom two miles from the beach, directly off Glencoe station. Owing to the tug strike at this port, no wreck expedition could be secured to send to the stranded boats, and the captain was ordered to secure all the men he could at Glencoe to throw the iron ore cargoes overboard. The steamer W. P. Palmer, which the steel trust has been using as a tug at South Chicago, was at once dispatched to the wrecks, and with favorable weather it is believed the two boats can be released to-morrow. Both the stranded vessels are owned by the United States Steel Corporation. The two vessels are worth about $300,000, and each has on board three thousand tons of iron ore. They were bound from Escanaba to South Chicago. Uuless heavy weather should set in both boats will probably be released without great damage, although the ore jettisoned will amount to several thousand dollars.

Prices of bituminous coal all through the lake district, from Buffalo to Duluth, and perhaps all over the country, may take a sudden jump upward during the coming week or during the next two weeks at the most. It is not known to what extent the price will be increased, but it is understood that the addition will be sufficiently large to make a material difference to the large consumers. Sixty members of the Lake Erie Coal Shippers' Association, which controls practically all the coal business of the Great Lakes, have met insecret at the Auritorium annex in this city, and reached a unanimous agreement to take advantage of the shortage in anthracite coal caused by the strike of all the miners in Pennsylvania and give the prices for bituminous coal a healthy lift. Members of the association refused to give out any details of the meeting.

The merits of the bascule type of bridge in preventing cars from running into an open draw was demonstrated in Chicago, on the 15th inst. The motorman of a train on the Metropolitan Elevated Ry. failed to get his train under control in approaching the bascule draw-bridge over the Chicago river, while it was being opened to let a boat through. The train failed to stop at the danger signal, and collided with the bridge in the raised position. The front end of the motor car was lifted up, as though to climb the structure, and the rear of the car smashed into the roof projection of the car behind. The motorman, the guards and the few passengers on the train were badly frightened, but no one was injured. The Railway and Engineering Review takes occasion to state in noting this casualty which might have been attended with such serious results, that, had the drawbridge been of the ordinary swing type, the train would undoubtedly have gone into the river. Traffic was blocked about 20 minutes, three of the four tracks being cleared as soon as the bridge was lowered to place.

An exploration of the crown of Washington street tunnel, or "McCarthy's Reef," was made yesterday by City Diver Donovan, acting under the direction of City Engineer Ericsson. The Chicago Record-Herald says: The discoveries were quite important, and the exploration will be continued until the true status of affairs in the bottom of the river at this point is made clear. It was found that a row of piling extended well across the west draw along the north side of the tunnel, and that the tops of these piles were fully two feet higher than the crown of the tunnel. This explains why a steamer drawing only seventeen feet of water could not get over the top of the tunnel when the latter showed eighteen feet. Back of the row of piling were several other piles, laid lengthwise of the tunnel and making an adequate protection of it againts the impact of any south bound boats. Although the diver was only down an hour he discovered enough to make it certain that the steamer Parnell and all the other boats that have gone on the tunnel have rested on the piling and did not touch the tunnel crown at all. City Engineer Ericsson said that the investigation had not gone far enough to disclose whether the piling was put down by the traction company as a protection to the tunnel, or whether it was a portion of the old cofferdam erected at the time the tunnel was built. In any event, he said, that the piles would be jerked up without delay. The diver's report shows that the tunnel top is as level as a table and almost as smooth, and that the current down there is very strong. There is not a scratch, crack or any other mark to show where the heavily loaded boats have rested, and the diver was disposed to argue from this that the protection piling on the south side of the tunnel was as complete against outgoing as against incoming boats.

BUFFALO.

Owing to the scarcity of west-bound package freight, some of the railroad lines are putting their boats into the ore trade. It is learned that the Union Steamboat Co. had contracted to carry 90,000 tons.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, Buffalo, for the week ending May 21. Prevailing wind direction for the week N.E.; highest velocity 28 miles, from the S.W. on the 19th; mean temperature for the week, 59°, highest temperature 81, on the 18th; lowest, 40° on the 15th.

Of nine boats departing on Tuesday from this port, eight went light, and it is stated that everyone of them intended taking on cargoes at Ohio ports. In some of these vessels, where the captain feared he would run short before reaching his loading port, a few tons of Buffalo fuel was placed, but not enough to prove of much advantage to the local dock. Thus, by the coal strike, which has stopped shipments of that commodity, the men who sell soft coal are seeing their usually large and lucrative business cut down to a bare existence.

The Canadian Pacific steamer Athabasca struck a rock on Friday last, five miles off Detour. The Athabasca had a cargo of steel rails aboard which, it is supposed, caused the compass to deflect, and the captain supposed his ship was three miles from the rock on which she fetched up. Temporay repairs were made at Detour, and she proceeded to Owen Sound for further survey and repairs.

CLEVELAND.

A meeting of the executive committee of the Great Lakes Towing Co., was held here on Wednesday afternoon. President Newman said that no business of importance was transacted and that no action in regard to the strike was taken. We have made known our policy, said Mr. Newman, and there will be no change.

The survey of the collision damage of the steamer George Spencer, shows eighteen broken frames. Twelve outside planks will have to be renewed at the break. The shelf pieces on both sides of the hull also are cracked. It will take about three weeks to complete needed repairs, and the cost may reach $8,000.

Mr. A. C. Diericx, chief designer in the hull department of the American Ship Building Co., who has resigned to accept the position of general superintendent with the Risdon Iron works, left for San Francisco Tuesday. Mr. Diericx was presented with a beautiful diamond pin by the office employes of the company here and at Lorain.

Mr. Edwin S. Mills, the assistant general manager of the Pittsburg Steamship Co., has returned from California, where he went in February to regain his health, which had been impaired by hard work and by an illness which required an operation. He has been at his office in the Perry-Payne building for the last few days, but is not taking up the very active duties of his post as yet. He seems to have recovered his health almost completely.

The Cleveland & Buffalo line has started its Saturday excursion between Cleveland and Buffalo and Niagara Falls. The business was popular last year, and the demand for the trip has already been so heavy that while it was not the intention to start them until after June 1, the company being persuaded has determined to put them on two weeks in advance. General Passenger Agent Herman announces that the rates and conditions will be the same this year as heretofore.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, for the week ending May 21st. Prevailing wind direction for the week N.E.; highest velocity 50 miles, from the west on the 19th. Mean temperature for the week 60; highest temperature, 82 on 19th; lowest, 73, on the 15th. Sunrise and sunset date computed for local time; May 23rd, sun rises, 4:31; sets, 7:21; May 26th, sun rises, 4:29, sets. 7:24: May 29th sun rises, 4:27, sets, 726.

Lieutenant Commander George Clark, who has had charge of the Cleveland hydrographic office for more than a year, has been transferred to the training ship Monongahela. Lieut. Clark came to Cleveland after his return from service in the Philippines. The assignment to the Monongahela is very satisfactory to him, in fact, it is just what he asked for. After Lieut. Clark's departure Nautical Expert Dovale will have charge of the local office, it being understood that the Navy Department will not send another man to this city for some time, if at all.

The contractors at work on the reconstruction of the west pier at Huron, are preparing to sink two more cribs in their work. Until the superstructure has been added the cribs will be buoyed that vessels may be in no danger of running afoul of them while trying to enter the harbor. The work at all ports along the lake in this district is being pushed with vigor this year, as Major Dan C. Kingman, Corps of Engineers, U. S. A., in charge of the conservancy and improvement of the rivers and harbors within this district, is systematically urging the men to their best efforts. From the speed attained at this early date it is expected that there will be more work done in this district this year than has ever been accomplished, and some records are looked for.

There will not be any more conferences between the officials of the Great Lakes Towing Co. and the representatives of the organized tugmen. In discussing the strike which has been on at this port for seven weeks, an official of the company said: "Our policy has been fixed and as long as the men that are in control now continue to boss the job, we will not have any more dealings with the grievance committees of the Licensed Tugmen's Protective Association nor the Firemen and Linemen's Union. We will always be glad to meet our employes," he said, "but hereafter when they make an agreement with us it will be as individuals and not as members of an association or union. It may take some time," the official said, "to reach an agreement along those lines, but when a settlement is made it will be on that basis."

The steel structural work for the new factory of the Brown Hoisting Machinery Co., Inc., at the corner of Hamilton and Belden streets, Cleveland, O., is being put in place rapidly. The foundation dimensions of this shop are 500x312 feet, and the enclosed space will be all in one room. The entire shop is composed of seven bays, each equipped with mammoth traveling cranes. The wings on either side are to have saw tooth roofs, with light gables facing the north. The three main bays are very high, the center one being 84 feet clear, from the ground, so arranged for erecting machinery. The entire building is constructed of iron, steel, glass and cement, making it as fire-proof as possible. The floor space of the new shop is double that of the old one. The roof and sides are to be constructed of a new sheet steel, dove-tailed, which was invented for the purpose by Alexander E. Brown, vice rpesident and general manager of the company. The entire building will be lighted by electricity, and heated and ventilated by force blast.

DETROIT.

The old Toledo passenger steamer Pastime, has been condemned, and after taking out her machinery the hull will be relegated to the boneyard.

The carferry St. Marie, stationed at the Straits of Mackinac, arrived on Tuesday to go into drydock for repairs. The boilers reuire general overhauling.

The large warehouse and coal dock of the Union Storage Co., at Port Huron, were burned Monday night. The building was owned by McMorgans & Jenkinson. Loss $20,000.

All the laborers employed in the Davidson shipyards, at Bay City, struck on Tuesday, for an increase in wages. The men have been getting from $1.25 to $1.50 a day. They all demand an advance of 25 cents a day.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, Detroit, for the week ending May 20th. Prevailing wind direction for the week, east; highest velocity 27 miles, from the N.E. on the 14th; mean temperature for the week, 62; highest temperature, 87° on the 19th; lowest, 39° on the 14th.

The steamer Kitty Forbes, laden with lumber and aground off the Star Island House, at the St. Clair Flats, caught fire on Wednesday evening, and burned to the water's edge the blazing hull was towed up the river to a point where it could be sunk in order to save as much of it as possible. No estimate of the loss is obtainable. No lives were lost.

The steamer King Edward, which was brought by the Algoma Central Railway, and brought from the Atlantic to go on the Georgian Bay route, arrived at the shipyard here this week. In order to get the steamer through the locks of the Welland canal, five feet had to be cut off the paddle boxes on each side. This is now being replaced and the steamer put in shape for the new run. The King Edward was formerly the Montauk, and ran on Long Island Sound between New York and Block Island. She has accommodations for 500 passengers, and can run fifteen miles an hour.

At Port Huron the Jenks Ship Building Co. is building for the United States lake survey seven catamarans, each 40 feet in width. Each catamaran has two large steel cylinders 30 feet long and 40 inches in diameter. When completed all will be fastened together and the entire width will be 280 feet. Each of the cylinders weighs about one ton and the combined catamarans will be used for sweeping the river to ascertain obstructions to navigation. Bars of iron will be let down at a certain distance apart. Eacah bar will be surmounted with a flag. As the sweeping process takes place the flags will dip whenever an obstruction is found.

Word comes from Toledo that a new phase has developed in the tug strike. Monday the tug Tuthill was sent down to the foot of Ash street, to wash out the boiler of the steamer J. H. Pauly, which is unloading lumber at the point named. When the 'longshoremen learned the mission of the tug they refused to continue their work, and informed the vessel captain to that effect. They declined to unload the steamer if she employed a tug with a non-union crew to clean her boiler. This is the first instance of this kind that has come to light in connection with the tug strike, and whether or not it will be carried any farther remains to be seen. The L. T. P. A. is not affiliated with the American Federation of Labor as is the International 'Longshoremen's Association and future developments only will show whether or not the last named organization will associate with the tugmen in their strike against the Great Lakes Towing Co.

The new Detroit & Buffalo line will start its first boat over the proposed route between Buffalo and Detroit June 2. Just which boat will start the route has not been determined. The interest in the line has already been demonstrated by the inquiries which have come in from shippers of freight and from the passenger men of railroads, who say that business is promising from the start. The backers of the new route have hardly dared to hope that the line would be a paying investment the first year, but from indications all expectations are to be surpassed, business is promising from the start. The passenger tariffs have just been issued showing that the one way rate is to be $3.50, and the round trip rate $6, which is a considerable reduction from what has been possible by using the two old lines through Cleveland, with the transfer here. The running time will be thirteen hours between Detroit and Buffalo, and the promises are that the rates and service will alike be attractive to travelers.

Senator James McMillan, when here a few days ago, said that the only obstacle in the way of the passage of the bill providing for a pension for life-savers, is the danger of opening up a long civil list, and have the government pensions extended in directions other than that for which they were originally intended. The Senator said that the measure has many warm friends in both House and Senate, but that it also has bitter opponents. Pensions were originally created for those rendering valiant service in the army and navy, and a fear is expressed that if the life-savers are granted pensions a long civil list would be opened up. There are those who contend that railway mail clerks are engaged in hazardous work for the government, and are entitled to pensions. Senator McMillan is heartily in favor of granting pensions to lifesavers, and it was he who introduced the bill in the Senate.

DULUTH-SUPERIOR.

Michael Ryan, past grand president of the Tugmen's Association, has been expelled for one year for acting as business agent for the Great Lakes Towing Co., in contracting for the services of captains and engineers at Duluth. This action was taken by the Duluth lodge, of which Ryan was local president.

The steamer George J. Grammer, which was built at West Superior, on the order of Frank Seither, of Cleveland, has cleared from Marquette with her maiden cargo of ore, and is expected to reach Ashtabula by Thursday of this week barring accidents. She will ply between those ports this summer, and will engage in the ore and coal trades.

The United States was given judgment for $4,012 againnst the Davidson Steamship Co. by a jury in the Federal Court at Duluth this week. That sum covered the damages to the breakwater at Two Harbors, which the steamer Shenandoah inflicted by collision a year ago. The defense was that the breakwater was not properly lighted.

The steamer Liberty, owned by the Booth Packing Co., has been sold to a company composed of Ludington, Chicago and Manistee business men. It has been known for some time that the Booth company was anxious to dispose of the Liberty, Hunter and others of its smaller boats, because of the purchase of new and faster craft by the company. The Libertv has been at Duluth for several months. She will be used by the new owners on the Ludington-Frankfort route, making a round trip daily.

What the result of the coal strike will be so far as the head of the lakes is concerned, is a question of deep concern to dealers just at present. The supply at the head of the lakes is now low, and up to the present the coal movement to the head of the lakes has been very slack, and many of the vessels are coming up light. In fact business has been so dull that it is reported several vessel owners are seriously considering the advisability of taking their boats from the coal trade, and putting them in the ore business.

It is expected that within the next three weeks the new Jones & Adams coal dock at the outer end of the Philadelphia & Reading dock, will be able to receive coal. Work has been rushed on the dock for sometime past, so that the receipt of coal could begin as soon as possible. The erection of the rigs is now practically completed. The dock will receive both hard and soft coal, having local offices here. The head offices, however, are located in St. Paul. The next coal dock to be ready will be the large Northwestern, at the end of Winter street, on Superior Bay. The greater part of construction work on this dock is completed.

KINGSTON, ONT.

During the last month 400,000 bushels of wheat from Fort William have been unloaded at the Montreal Transportation Co.'s elevator.

The local Board of Trade will legislate to have the St. Lawrence river canals deepened.

Capt. Augustus has been appointed marine inspector for Lloyds, from Kingston to Qubec.

Capt. Hy. Wilson, of New Orleans, is here with the schooner Lertina. He has purchased three vessels from the upper lakes and they will be taken down the St. Lawrence river to the seaboard and will be used in the oil, and also general merchandise trade, between New Orleans and Rio Grande.

The big government dry-dock here is having its entry gates enlarged so as to admit of the docking of vessels of sixty foot beam, and three hundred feet in length.

The big steamer, King Edward, purchased in New York, reached here yesterday. It has been bought by Mr. Clergue, of the Clergue syndicate, and will ply between Sandusky and Sault Ste. Marie.

LAKE FREIGHTS.

The only change in the lake freight situation is that due to the strike of the anthracite coal miners, and the consequent loss of shipments. Bituminous from Ohio ports calls for fair chartering, but the 30 cent Lake Superior rate still holds.

Grain.—The market appears to be cleaned up again at Chicago, with the last quoted rates at 1¼ cents on corn and 1⅜ cents on wheat.

There is no change to report in iron ore freights, though great detention is complained of at discharging ports, a feature which has prevailed to a greater or less extent, ever since the season opened.

Lumber rates are steady, with fair chartering at former quotations.

A dispatch has been received from Kingstown stating that the Royal mail steamship Atrato, when off St. Pierre spoke the cable ship Pouyer Quertier, from which it was stated that the bed of the ocean had been much disturbed. She found nine hundred fathoms where only three hundred was charted. Rechartering of these waters will be necessary.

INVENTORS: CARBORUNDUM AND ITS CREATOR.

It is one of the curious facts of modern industrial progress that very few of the men who, as inventors, have been its most potential factor are widely known. Outside of a small circle in each individual case, their names are as meaningless as that of the average man. We see, use or handle, articles every day articles which we know must have called the highest inventive faculties into play in their devising, and we wonder sometimes who the genius is whose mind has contributed so abundantly to human conveniences in the article before us, and not infrequentlv we speculate mentally as to how much money he got, or is getting out of it. Its manufacturer may be known to us—in fact, he usually is, through some form of advertising; but it rarely happens that the name of its inventor comes under the public eye or is sounded in the public ear. Like the average writer for the press, the inventor is just one of many evenly cut cogs in a huge machine, his work being privately estimated on a revenue basis, his name figuring as "Dennis," and the fruits of his toil usually passing to others.

This subject, in some of its aspects, is very entertainingly presented by Paul Latzke in the Saturday Evening Post, under the title of "The Unknown Captains of Industry." One of his personal references has to do with Edward G. Acheson, the inventor of carborundum, a product which, as the greatest abrasive ever introduced for industrial purposes, has a vast field of usefulness. Noteworthy. too, it has proved an exception to the rule, for inventions and discoveries, in that it has made its originator both rich and famous; and all that, moreover, while he is yet but 46 years of age.

How did it happen! Well, here is the story in brief:

But a few years ago Mr. Acheson was practically penniless, and broken in spirit. He had served for six years under Edison in this country and in Europe, and had mastered the science of electricity. The problem of converting heat directly into electrical energy had always fascinated him, and in 1889, he sacrificed everything to devote himself to its solution. Within the space of twenty-four months he had lost in his work the results of seventeen years of unremitting labor.

He had also demonstrated to his own satisfaction that the thing could not be done, at least by himself, and being a practical man, he cast about for something else that was more promising.

After loking the situation squarely in the face, he had about made up his mind to give up original research and look once more for a salaried position, when suddenly he remembered, as if by inspiration, a little incident that had happened while he was experimenting at the Edison laboratory. In this institution all sorts of queer formations are constantly coming to the surface as by-products. Mr. Acheson recalled, says Mr. Latzke, "that on one occasion, when they were fusing some clay and carbon, a substance harder than anything ever secured in the laboratory had resulted. He knew the tremendous value to the industrial world of emory, corundum and other abrasive materials, and he concluded that here, if he could only reproduce the stuff formed in the Edison workshop, he might make a fortune. Carborundum was the result. It was a long, uphill struggle, for several years after he started on this new line, but his energy told in the end. A company was formed to establish works at Monongahela City, in Pennsylvania, and then at Niagara Falls. A startling illustration of the value of Mr. Acheson's work is furnished by the fact that the first sale of carborundum consisted of a consignment of two hundred carats at thirty cents a carat, or over $550 a pound. By improving the process it is now possible to market the abrasive at ten cents a pound in the rough. Every manufacturing country in the world uses the material. The market for it was enormously increased recently by the discovery that, fused with ordinary steel, it adds very materially to its strength.

"Carborundum is made of fusing sand, carbon, sawdust and salt in electric furnaces under tremendous heat. As a by-product, the company secured last year a million and a half pounds of pure graphite, which heretofore has been found only in nature. This alone may be regarded as an extraordinary achievement."

FINELY DIVIDED IRON ORES.

In a treatise on the use of finely divided ores obtained by concentration Prof. Wilborgh, of Stockholm, reviews the methods by which such ores can be separated mechanically or magnetically, thus permitting the utilization of what would otherwise be wasted. The fine ore which can be smelted in the blast furnace is limited as regards quantity by its tendency to pass through the fuel, and therefore descend without being completely reduced; but it may also be made into riquettes or turned into spongy iron. Briquettes made from fine ore cemented by quick or slaked lime, with the quantity of water necessary to make a thick paste, harden sufficiently when dried in air. What is called "ore-coke" is made by mixing the fine ore with tar or bituminous coal, 30 per cent. of the latter to 70 per cent. of iron, and highly heating the whole, which yields a hard and compact product.

CANADIAN TIMBER—LAWS AND TARIFFS.

Few persons, except those directly interested in the trade, have been able to keep track of the sliding scale of Canadian timber and lumber tariffs during the past few years. The Toronto Globe has given a concise statement from the Canadian point of view, on the Ontario sawlog policy of the government from which we take the following:

"The management of trade and commerce has always been regarded as being a Dominion Government matter.

"The aim and desire of the lumber trade has always been to secure free admission for Canadian lumber into the United States market.

"The Reciprocity Treaty of 1854 gave free admission to Canadian lumber, and under it there was nothing to prevent the export of Canadian logs.

On the abrogation of the Reciprocity Treaty in 1866, an ad valorem duty was imposed on Canadian lumber. In the same year the Government of Canada imposed an export duty of $1 per 1,000 feet on logs.

"In 1872 the United States duty on Canadian lumber was changed from an ad valorem to a specific duty of $2 per 1,000 feet without respect to quality. This struck a heavy blow at the coarser grades of Canadian lumber, practically shutting them out of the United States market. The higher grades still went there.

"The export of logs from Canada was confined to one province, Ontario, and to one part of that province, viz., the territory bordering on Lake Huron.

"As long as there was plenty of pine in Michigan there was no export of pine from Ontario, and Canada had nothing to offer for free entrance of her lumber.

"There was practically no export of logs prior to 1889, when the Americans, recognizing the disappearance of Michigan pine, began to buy Canadian logs to supply their Michigan mills, and thus avoid the wiping out of their mill plant. The attention of the Dominion Government was called to the fact that there was now an implement in their hands to bring pressure to bear upon our American cousins to give a quid pro quo. The export duty on Canadian logs was accordingly in 1888 raised to $3 per 1,000 feet.

"In 1889 the Dominion Government reduced the duty to $2 per 1,000 feet, as informal negotiations had sprung up looking to better terms for Canadian lumber.

"The Ontario Government, recognizing that it would be a proper step to assist the Dominion Government, or, at any rate, to put an end to the unfair system prevailing of Ontario logs going out while our lumber was discriminated against, determined to put a conditon in the timber sale, of October 1, 1890, requiring that logs cut on lands included in that sale must be sawn in the province. Very shortly afterwards an agreement was arriver at by which the United States reduced the duty on Canada lumber to $1 per 1,000 feet, and Canada thereupon removed the export duty on logs.

"In 1894 the position was further improved for Canada by the removal, under the Wilson Bill, of the $1 duty on Canadian lumber, which now obtained free admission to the United States markets.

"From 1886 down to 1890 the government of Canada dealt five times with the question of the export of logs—four times by order in Council, and once by Act of Parliament, in which they took general charge of the export of logs question.

"It will thus be seen that the Ontario Government had thus far no occasion to interfere, as the government of Canada could stop the export of logs at any moment by raising the export duty. It had assumed to do this and had obtained what was regarded by the lumber trade as a satisfactory concession for the wiping out of the duty, viz., a lowering of duty on lumber from $2 to $1 per 1,000 feet. The placing of the condition in the sale, of 1890 by the Ontario Government was made a strong plea at Washington for an increase in the United States duties on Canadian lumber.

Then came a change. The Republican party being restored to power, protection was again the order of the day, and in 1897 the Dingley Bill was passed, re-imposing $2 per 1,000 feet on lumber exported to the United States, with an automatic clause adding to this sum any export duty that might be imposed by Canada, thus committing a breach of agreement and at the same time trying to tie Canada's hands.

"This completely changed the position of affairs with regard to the United States, and as, owing to the automatic clause of the Dingley Bill, the government of Canada could not restore the export duty on logs without entailing disastrous results, the Ontario Government was appealed to to meet and overturn the unfair and ungenerous legislation of Congress. As a first step, when a timber sale was held in 1897, the condition was re-imposed that the logs must be sawn in Canada. But the bad faith observed by the United States was so resented that the matter could not stop there and an agitation sprung up to apply the manufacturing condition to all licenses. The Hardy Government gave a full hearing to all the interests affected and then made up its mind to protect the interests of the province.

"There was plenty of time, as it was not felt that the conditions of current leases could be changed until their expiry on April 30. But on October 13, 1897, the then Premier wrote to the president of the Toronto Board of Trade that the Legislature would be asked at its coming session to enact such legislation as the public interests might require, when the whole matter was fully and openly discussed. There was a clear intimation that a change was to be made; otherwise there would have been no need for any enactment.

"To prevent any possibility of disallowance, if such should be thought of, the government proceeded to make regulations under authority of existing statutes, and on December 17, 1897, an order in Council was passed providing for the sawing of all logs in Canada after April 30, then next. While the House met, it was asked to approve the order in Council. The attempt on the part of the United States to outwit us was therefore thwarted, and the result has been to carry the war further than our American friends expected, for instead of our mills being dismantled and removed to Michigan, as they expected under the automatic Digley tariff clause, the action of the Ontario Government has caused Michigan mills to be dismantled and moved over here or new mills erected in Ontario.

The Ontario Government was not called upon to move as long as the Dominion Government could protect the rights of our people. It left the matter to the proper authority, viz., the Dominion Government, but when that government could not, without disaster to the whole lumber trade of Canada, do what was necessary, then for the first time the Ontario Government was bound to act, and it did so, to the extent of what was honorable, legal and necessary.

"In order to understand the position properly, it might be said that owners of timber berths are required to take out a license annually for the right to cut timber. This license expires on the 30th of April. In the Government Bill it was not intended to apply the manufacturing clause to saw logs until the close of the license year. Mr. Whitney and his friends contended that the manufacturing conditions should be applied forthwith. This would have been a breach of contract with the lumbermen, as it changed the conditions on which the license for the year had been issued. The Government felt that its contracts should be kept inviolate, and in this view the House concurred. Had the manufacturing clause applied to the contracts then pending, it is all but certain that the courts would have set it aside.

"Since then the right of the government to impose the manufacturing conditions upon logs cut in Ontario was argued before the Court of Appeal, and after an exhaustive discussion of the rights of the province, the court held that the law was strictlv within the jurisdiction of the province, and now may be considered the settled policy of the country.

"This action on the part of the government has brought prosperity to many Ontario towns and villages along the shores of Lake Huron. Saw mills which, owing to a hostile tariff, were idle and falling into disrepair, have been again put in operation. New mills have also been erected at several points, with immense sawing capacities, and involving the expenditure of large sums of money. These mills are of the most modern type, and there is no doubt that the saw-milling industry on the Canadian side of the Great Lakes has now been placed on that permanent basis which is warranted by the illimitable forest wealth behind it. Thousands of Canadian workmen are finding employment in sawing in our own country the logs which were formerly towed across the lakes in an unmanufactured state to feed the saw mills of Michigan, and thus contribute to the prosperity and trade of a country which has erected a tariff barricade against the importation of our sawn lumber."

LAUNCH OF THE J. M. JENKS.

The steel cargo steamer J. M. Jenks, building at the Lorain yards of the American Ship Building Co., to the order of Messrs. Hawgood & Co., was successfully launched on Saturday last.

The general hull dimensions of the Jenks is 434 feet over all, 414 feet keel, 50 feet beam and 28 feet deep. She will have triple expansion engines with cylinders 22, 35 and 58 inches by 40-inch stroke. Two Scotch boilers to be fitted with the Ellis & Eaves induced draft will furnish the setam. The new boat will cost $260,000, and on eighteen feet will carry 6,200 tons. She will come out in about thirty days.

Among those that witnessed the launch were: Capt. Newell, of Omaha, Mr. and Mrs. J. M. Jenks, of Chicago, Mr. and Mrs. H. A. Hawgood, Mr. and Mrs. W. A. Hawgood, Mr. Arthus H. Hawgood, Mr. and Mrs. Sheldon Parks, Mr. and Mrs. Horace Parks, Mr. A. Stearns, Mr. Henry Christy, Mr. N. S. Keller, Mr. Harold B. Nye, Mr. Charles Eveleth, Mrs. D. E. Bierce, Mr. H. E. Bierce, Mr. and Mrs. Robert Logan, Mr. and Mrs. A. C. Drericx, Mr. S. W. Parsons, Mr. Thomas O'Brien, Mr. George Warner, Dr. and Mrs. F. O. Reeve, Mrs. T. C. Ellis, Mr. Robert Jenks, Mr. John Jenks, Mr. A. G. Hutchinson, Mr. and Mrs. C. B. Smith, Mr. J. S. Harper, Mr. and Mrs. W. B. Hall, Miss Maud Lynch, Mr. R. B. Wallace, Mr. John Kane, Mr. and Mrs. Parker Shackleton, Mr. C. A. Payne, Mr. R. C. Wetmore and Mr. Jenkins.

Capt. J. F. Ashlstrom, who recently took one of the Hawgood steamers from Toledo to Seattle, will command the new steamer. The second of the Hawgood steamers now under construction will be launched in about three weeks, and will be named the H. B. Nye.

THE STEEL STEAMER HURONIC.

The new steel passenger and cargo steamer Huronic represents the high skill reached in the construction of freight and passenger steamers on the lakes. This steamer was built at Collingwood, Ont., by the Collingwood Ship Building Co., Limited, to the order of the Northwest Transportation Co., and was designed by Mr. Hugh Calderwood on plans and specifications approved by Mr. Frank E. Kirby, the well known marine architect, of Detroit, who is consulting engineer for the owners.

The following are the official dimensions as they appear in her certificate of building. "S. S. Huronic is built of open hearth steel throughout and is of the following dimensions:—325 feet over all, 308 feet betwen perpendiculars, 43 feet beam, and 27 feet molded depth. The steamer has very fine ends and a large water ballast capacity. Engines are of the triple expansion type; diameter of cylinders, 26, 42 and 70x42 inch stroke, steam being supplied by four Scotch boilers, 12 feet 6 inches in diameter by 12 feet long at a pressure of 175 pounds per square inch. Horsepower 2,400, gross tonnage, 3,330, net tonnage 2,212."

The Huronic has a guaranteed speed of sixteen miles when loaded and eighteen miles when light. In addition, for the safety of the passengers, the steamer is so extensively subdivided in compartments by water-tight bulkheads as to make her practicably unsinkable under all conditions. Again, the double bottoms, the one three feet six inches inside the other, will minimize the consequence of a break in the outer bottom, or shell plating, owing to grounding or accident from hidden rock, for the inner plating is in every respect as strong and as water-tight as the outer hull. The intermediate space will be utilized as usual, for water ballast for trimming purposes, the capacity of which is 800 tons.

This new vessel has first class accommodation of the best design for two hundred and seventy saloon passengers, having a double tier of cabins with outside staterooms. The dining room is forward and is built the full width of the lower saloon, thus making it very spacious, and is well lighted by large windows affording a view of the scenery and surroundings. It is finished in natural quartered oak and has a seating capacity for 150 people. This compartment is also magnificantly lighted by electric lamps arranged in alternate panels, forming the center of the pattern, and not on the beams as is usual, and the steel stanchions which support the roof are encased in richly molded and carved pillars.

The completeness which characterizes the whole of the new ship is very properly extended to the kitchen and pantries; for prompt service, so essential to a well ordered establishment, is impossible without ample accommodation. Large pantries have therefore been provided on the cabin deck immediately forward of the dining saloon and connected with it only by hallways and swinging doors, so that all undesirable odors are removed from that and other parts of the vessel. The kitchen and pantries are provided in a most complete manner with all the details which a long experience of the company's stewards suggested, and ample cold storage provided for the proper keeping of supplies.

Every known device pertaining to a first class steamship, from the sub-division of the hull to the search light upon the bridge, is found on the Huronic, and this completeness in her construction has been carried out in all departments to the greatest degree. With this splendid addition to the fleet of the Northwest Transportation Co.—whose route offers such splendid passenger attractions—it is confidently expected that a corresponding increase in the traffic will follow and that the steamship Huronic will amply fill the requirements of the service to the entire satisfaction of the travelling public and shippers on the lakes.

LATEST MARINE PATENTS.

698,584.—Screw-propeller. Robert Thaler, West Bay City, Mich.

699,043.—Apparatus for the hydraulic propulsion of ships. Leon Vidal, St. Rome du Tarn, France.

697,442.—Row lock. Charles H. Butts, Norwich, Conn.

697,704.—Hydraulic dredger, excavator and elevator. Gustavus L. Cudner, New York, N. Y.

697,712—Paddle wheel. Henri Glardon, Galveston, Tex.

697,826.—Electrical steering apparatus for ships. Lieutenant Commander Bradley A. Fiske, U. S. Navy, assignor to Western Electric Co., Chicago, Ill.

697,899.—Governor for marine engines. Bradford W. Storey, Mount Holly, N. J., assignor to the International Marine Governor Co.

699,144.—Means for cleaning ships' hulls. Walter S. Burt, Albury, New South Wales, Australia.

699,356.—Coupling for ships' propeller shafts. William W. White, New York, N. Y.

699,450.—Devise for correcting compass errors. Jorgen Christensen, San Francisco, Cal.

699,451.—Hydraulic steering mechanism. Jorgen Christensen, San Francisco, Cal.

699,518.—Tackle block. Edgar B. Hammond, New Bedford, Mass.

699,928.—Ship's ventilator. Charles McVeety and John F. Ford, Philadelphia, Pa.

700,012.—Protective tumbling hood for ship's hatches. John Bergensen, New York, N. Y.

700,051.—Hoist for unloading ships. William E. Hutchins, Louisville, Ky.

ARMOR FOR MODERN FIGHTING SHIPS.

No armor afloat can any longer be relied upon to keep out the projectiles of the heaviest naval guns. But if guns now overmatch all practicable armor, and continue to increase in power, as they have done in the past, more rapidly than armor increases in resistance, will they not cause armor for ships to be abandoned and become obsolete, as gunpowder drove out of use armor for men?

The argument that armor for ships of war will, in course of time, become obsolete, is usually based upon a supposed analogy of the case of ships with that of men. Since the development of small arms resulted in the abandonment of armor for men, why will not continued advance in the power of ordnance render it useless to armor ships? As a matter of fact, this analogy is a false one, and for two reasons:

1. A man's strength is limited, while a ship's carrying power depends only upon her size, and may be made as great as we please.

2. Men, being highly organized animals, are usually disabled by a wound in any part of the body, and consequently must be completely covered with armor to be really protected, while ships, over a large percentage of their area, may be pierced through and through without suffering serious damage, and so need protection only over a few vital parts.

Again, even if the power of guns be so great as to render it useless to attempt to keep out their armor-piercing projectiles from any part of the ship, still an enormous advantage would result from the use of armor which kept out explosive shell. A solid bullet is enough if it hits a man, but a great many solid shot of the largest size may enter a ship without putting her out of action. But even recognizing the fact that the best armor will no longer keep out the explosive shell of the heaviest naval guns, a little consideration will show that by keeping out projectile of the smaller calibres armor renders a service of great value.

Taking, for example, the batteries of the latest United States battleship, it can be shown by simple calculation that of all the projectiles fired in any period of time only 1.1 per cent. will be of 12-inch caliber and only 3.9 per cent. of 8-inch caliber, while 13.1 per cent. will be 6-inch; about 33 per cent. will be 14-pounders and about 49 per cent will be 3-pounders.

In other words, armor which will defeat the 14-pounder shell, 2 or 3 inches, at fighting range, will keep out 82 per cent. of all the projectiles fired by a battleship, and armor capable of stopping the 6-inch shell, say 6½ inches thick will keep out over 95 per cent. In fact, when we consider that few projectiles will strike normally, and that fighting ranges, now great, are likely to increase rather than diminish, we may safely say that under any probable future conditions armor from 6 to 7 inches thick will keep out fully 95 per cent. of all projectiles which such a battery as that just referred to can fire against it.—Philip R. Alger, in Cassier's Magazine for June.

A MILLION DOLLARS A DAY BUSINESS.

Business amounting to considerably over a million dollars a day is the enormous volume standing to the credit of the United States Steel Corporation, as shown by an official statement made early last month, at a meeting of the directors by President Charles M. Schwab. The fisrt business year of the corporation ended on March 31, and the statement in question showed that during that year the corporation mined 13,326,705 tons of ore, made 9,079,000 tons of coke, and produced 9,035,000 tons of steel ingots. In the same period the entire United States produced, including, of course, the output of the United States Steel Corporation, 13,369,000 tons of steel; hence the output of the corporation amounted to a little less than three-quarters of the country's entire output. Great Britain produced in the same time 4,850,000 tons of steel, the Steel Corporation's output being twice as much as Great Britain's. Germany's output in the same time was 6,394,000 tons, and the output of France 1,465,000 tons. The total business of the Steel Corporation for the year, that is, the selling value of the company's products shipped, amounted to the enormous sum of $459,090,000. The amount paid out in railroad freights during the year, outside of the corporation's own railroads, was $54,147,000. The corporation paid in wages $112,829,000, and the average number of employes in service during the year was 158,263.—Cassier's Magazine for June.

Damages—Amount.—An employe injured by reason of a defective ladder on a ship, was unconscious for several days. Among other wounds, he suffered a compound fracture of the right leg, necessitating several painful operations, as a result of which his leg was shortened about three inches, and remained stiff. He was permanently disabled for anything but very light work, which he could probably do only when sitting, and such work appeared difficult to obtain. He had been a healthy man, forty-four years old, earning $3 a day, and $5 for night work, and had steady employment. Held, that $6,000 damages was reasonable. The contributory negligence of a fellow servant was no defense. The Anchoria, 113 Fed. Rep. (U. S.) 982.

POWER CANALS AT SAULT STE. MARIE.

The Chandler-Dunbar Water Power Co. and the Edison-Sault Electric Co., have protested against the encroachments of the Big Consolidated Power Co., of the Clergue syndicate. Their protests have been constantly before the War Department, but never particularly effective. Now an ejectment suit, which may ultimately reach the Federal Supreme Court, has been started, that will test the right of the big company to use water which the little companies claim naturally belongs to them.

The facts in the case appear to be that the Chandler-Dunbar Co. and the Edison Co., have a comparatively small canal. The main river is tapped above the inlet of the small canal by the large canal which goes around the smaller canal and empties below it. The government assumes the right to say that no canal shall be employed which interferes with the levels in the ship canal. This is to protect the shipping. Now the further point arises whether those living away from the river can take water from the river and interfere with the property rights of those living along the river. Has anyone a right to move the river, so to speak, and depreciate the value of the property by interfering with the value of the water power? It is natural to assume that if the government permits the use of remedial works in St. Mary's river, it is only a question of time until the river is practically dammed and the water now flowing through it will be released through the ship canal and power canals, the latter to have what is not needed by the first. The little fellows are trying to find out whether this may be done without considering their rights as being contiguous to the river, and on these lines will attempt to restrain the big company from opening its canal. The machinery at their power house, they contend, was built and installed to be operated by the full head of water they now obtain, but that with the big canal above them, in operation, the water in the river will be so diverted that the value of the smaller canal will be destroyed. The case is one of the most important ever instituted in the upper peninsula.

DETROIT TO BUFFALO IN 1834.

The re-establishment of a direct line of steamers to Detroit and Buffalo this season has called to the memory of many old residents of Detroit and other parts of Michigan, the days of the first steamboat service between the Detroit river and Buffalo. It was supposed by some that after the steamer Walk-in-the-Water, which run over that route from 1818 to 1822, was wrecked, direct service was not established again for about 30 years, but a letter written nearly 70 years ago by Dr. Harry Conant, of Monroe, father of the present Harry Conant, shows that there was a line of steamboats—not very direct, according to the writer—plying between Detroit and Buffalo in 1834. The letter, which is to a friend in Monroe, is as follows:

"Saturday evening, 19th April, 1834.—Off Erie, steamer Michigan, Capt. Pease.—If I had left home on the 1st of April instead of the 14th, I should say that I had been fooled with a vengeance. Two days in Detroit, then left before the boat was ready so as to hold the passengers. Stopped at Grosse Isle half a day to complete preparations, then on to Huron. Found ourselves out of wood and none to be had there, so back to Put-in-Bay. All in boating it aboard. Last night came to Cleveland; this morning on to Fairport. Was overtaken by the O. Newberry which left a day or two after us. This waked up Capt. Pease a little and with the assistance of a strong aft wind we shall probably reach Buffalo to-morrow about church time. The disappointment of the passengers at our numerous mishaps and delays has produced an astonishing elongation of the faces among them and will operate against the credit of the boat. There are about 200 aboard with a full share of ladies. Such has been the effect of the delay on Cole and myself that I fear we shall not recover our wonted humor during the remainder of our journey. * * *

Buffalo, Sunday morning, April 20.

Here I am. A fine morning. Good-bye for New York. I must go this morning or lose my company.

H. CONANT.

STATEMENT OF THE VISIBLE SUPPLY OF GRAIN.

As compiled by George F. Stone, Secretary Chicago Board of Trade Saturday, May 17th, 1902.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE Bushels.	BARLEY Bushels
Buffalo	956,000	251,000	162,600	106,000	321,000
Chicago	5,280,000	3,182,000	759,000	448,000	.....
Detroit	106,000	17,000	.....	20,000	.....
Duluth	9,080,000	43,000	31,000	90,000	56,000
Fort William, Ont.	2,357,000	.....	.....	.....	.....
Milwaukee	294 000	6,000	121,000	19,000	87 000
Port Arthur, Ont.	135,000	.....	.....	.....	.....
Toledo	45,000	160,000	165,000	84,000	.....
Toronto	16,000	.....	15,000	.....	2,000
On Canals	506,000	.....	223,000	.....	.....
On Lakes	1,281,000	467,000	476,000	201,000	.....
Grand Total	33.577,000	4,870,000	3,014.000	1,135,000	663,00
Corresponding Date, 1901	42,498,000	15 913 000	10 724,000	862,000	918,000
Increase for week	.....	.....	97,000	.....	.....
Decrease " "	1,725,000	797,000	.....	211,000	150,000

While the stock of grain at lake ports only is here given, the total shows the figure for the entire country except the Pacific Slope.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED ESPECIALLY FOR THE MARINE RECORD).

Collision—Error in Extremes.—An error in extremis cannot be urged in exculpation of a vessel whose prior negligence has brought about the situation in which a mistake in judgment is excusable. The Protector, 113 Fed. Rep. (U. S.) 868.

Shipping—Damage to Cargo—Negligent Stowage.—A ship is liable for damage to cargo resulting from negligence in stowage, or in failing to properly cover a hatch to prevent leakage, notwithstanding any stipulations to the contrary in the bills of lading; nor is it relieved from such liability by the provisions of the Harter act. The Mississippi, 113 Fed. Rep. (U. S.) 985.

Evidence Considered.—Evidence considered and held not to sustain a claim made by a tug and tow, that a schooner which they overtook, not seeing the tow, changed her course after the tug had passed and ran into its wake, thus causing by such act a collision between her and the tow, which struck her directly astern. The Nathan Hale, 113 Fed. Rep. (U. S.) 865.

Tug and Tow—Passing Disabled Vessel.—A tug passing down a stream with a schooner in tow, held in fault for a collision between her tow and another tug which had become disabled and was unmanageable, because she failed to see the disabled vessel, and note her condition or hear her alarm signals, until so close upon her that the collision could not be avoided. The Protector, 113 Fed. Rep. (U. S.) 868.

Seamen—Injury in Service—Duty of Ship to Make Nearest Port.—Loss of time and risk to cargo are matters which cannot properly be permitted to outweigh the duty of a vessel to procure surgical aid for a seaman injured in the service without his fault or negligence, when such assistance is reasonably necessary, and cannot be otherwise obtained than by putting into port. The obligation of the ship is discharged only when the master has used reasonable care to provide for the comfort and care of the seaman. Whether he is required to deviate from his course to touch at some port will depend upon the circumstances of the particular case, such as the nature of the injury, the means for treating it on board, and the probability of being able to reach a port in time for his relief. If a person of ordinary judgment would know that the injury was such as to seriously endanger the seaman's life and limb, and that he should have medical or surgical aid at the earliest possible moment, it is the imperative duty of the master to take the necessary steps to procure such aid, if within his power. The Iroquois, 113, Fed. Rep. (U. S.) 964.

Glycerine above Dry Goods—Insufficient Hatch Covering.—A steamship, on a voyage from London to New York, stowed a quantity of glycerine in iron drums in the orlop deck of a hold, while on the lower deck was a quantity of furs and skins. The drums were not so fastened as to prevent fore and aft motion, or to prevent their moving vertically in heavy weather; nor was the hatch of the orlop deck battened and calked, as were the hatches above. The ship encountered rough weather, and at the end of the voyage it was found that some of the drums had been chafed through and were empty, and that a quantity of the glycerine had washed over the coamings of the hatch, and damaged the goods below. Held, that in view of the dangerous character of glycerine as a cargo, owing to the frailty of the packages and the consequent liability of leakage, it was incumbent on the ship, if it stowed it above other cargo, to take proper precautions, both by securing it from shifting in heavy weather, and by rendering the hatch leading below absolutely tight, and its failure to do so was negligence, which rendered it liable for the resulting damage to the cargo below., The Mississippi, 113 Fed. Rep. (U. S.) 985.

Steamers Meeting.—The steamers Grand Traverse and Livingstone met in Lake Erie in the early morning, shortly before daylight, being on practically parallel courses. The night was clear, and they saw each other when four miles apart. When a mile and a half apart, and again when a mile and a quarter, the Traverse signaled her intention to go to the right, each time porting half a point, but she received no answer to her signals, the last only being heard by the Livingstone, which thereupon starboarded her helm, and a collision resulted. When the last signal was given and heard, the vessels were in a position of safety, and had the Livingstone ported, as she should have done, or even kept her course, there would have been no collision. Held, that the navigation of the Traverse having been correct in all respects, neither the fact that her port light had gone out, nor that her lookout had temporarily left his post after the vessels had sighted each other, could have misled the Livingstone or contributed to the collision, which was due solely to the Livingstone's change of course after the signal of the Traverse was heard and understood; nor was the Traverse chargeable with contributory fault in failing to stop and reverse in the brief time remaining after the unexpected change of course of the Livingstone first created a situation of danger. The Livingstone et al., 113 Fed. Rep. (U. S.) 879.

MARINE RECORD

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CLEVELAND, O., MAY 22, 1902.

UNITED STATES—BRITISH SHIPPING.

With the consolidation, or merging of the several trans-Atlantic shipping lines, and the unparalleled activity in the shipbuilding interests of the United States, the impression may become a popular fallacy that we are bounding away ahead of all maritime powers in both naval and mercantile ownership and construction. Such, however, is not the case, for, if we but give a passing attention to the tonnage of our most formidable rival (the United Kingdom) it will be found from comparisons that we have a few decades of still greater activity in the shipbuilding and shipowning industry to go before we can equal the work now being done by the British.

In the last annual report of the Commissioners of Navigation, June 30, 1900, the total lake tonnage is given as 1,565,587 gross tons, and a total of 3,167 bottoms. This shows a mean of 494 tons to each craft. From figures now before us, it is learned that on the 31st of December, 1900, the Glasgow owned tonnage amounted to 1,582,229 net tons carried in 1605 bottoms, having a mean tonnage of 986, or in other words, 1562 vessels less than all kinds of documented vessels on the lakes, and carrying an excess of 15,642 tons, also with the difference of gross tons given for the lakes and net tons for Glasgow.

Now, to carry these figures a little further, we may take the combined net tonnage owned in Liverpool, London, and Glasgow, as follows: Liverpool 2,091 vessels, of 2,328,474 tons, London 2,905 vessels of 1,716,616 tons, Glasgow 1,605 vessels of 1,582,229 tons, showing a total of 6,601 vessels of 5,627,319 tons, or a surplus of 462,480 tons over the entire merchant marine of the United States, which is placed at 23,333 vessels having a gross tonnage of 5,164,839, or a mean of 221 tons as against a mean of 853 tons for the ports of Liverpool, London and Glasgow. The Liverpool owned tonnage of 2,091 vessels having a mean tonnage of 1,113. Glasgow 1605 vessels of 924 tons, and London 2,905 vessels of 591 tons.

Should we take the gross tonnage owned on the Atlantic and Gulf coasts combined, we find that it only exceeds the net tonnage of Liverpool by 399,418 tons, and, in taking the three divisions of Pacific coast, lakes and western rivers combined, the aggregate gross tonnage is only in excess of that owned in Liverpool by 96,781, reckoning net tons for the latter port.

WRECK COURT OF INQUIRY.

The RECORD has persistently, and we also hope consistently, advocated the adoption of rules governing inquiries on wrecks, collisions, strandings and other casualties of an extensive nature, involving loss of life or property.

As a rule, vessels go poking ashore here and there, and time after time, without any apparent cause or effort being made to place them there, unless the action of the screw or side-wheel is taken into account.

We are prone to admit that some slight advance has been made in this matter during the past year or two, by the local inspectors of steamboats, but they seem to have been unwilling actors, forced into an unenjoyable position and kept keyed up to the inquiry point solely through the voice of popular clamor or intense local feeling.

Judging from the lack of results where a so-called wreck or casualty inquiry has taken place, as also from the numerous cases passed over, or slighted, it would appear as if this portion of the duties of local inspectors of steamboats ought to be placed in other hands. The local inspectors inspect a steamer's equipment and issue licenses to officers after they undergo a voluntary, competitive examination, their duties are varied and multitudinous, such as they are, but that they should be loaded down to carry out judiciously, judicial decisions involving frequently, as they do, their own previous acts and judgment, requires a procedure, and capability, that by training and education they are totally unfitted for. In a word, there is quite a step from the tar pot or fire hold, to donning the judicial ermine.

The question, therefore, rests nominally. or eventually and altogether with the Secretary of the Treasury, for whether it is taken up by the Commissioner of Navigation, or the Supervising Inspection General of the Steamboat Inspection Service through his board of Supervising Inspectors in annual session assembled, or otherwise, every change of any moment requires the consent and signature of the Secretary of the Treasury irrespective of the origin or author of a desired or required change or innovation bearing upon former rules, custom or practice.

Considering the foregoing views, it is quite within the province of the MARINE RECORD, in seeking the welfare of a majority of the lake marine and kindred interests, to point out the present lack of important information which might be brought forward through the medium of a properly constituted "Wreck Court of Inquiry."

We may safely leave for further premeditation and discussion, the personnel of such a Court, letting our argument suffice for the moment, by stating that the lack of wreck inquiries on the lakes is fast sapping away the last vestige of technical skill and ability so needful for the creditable up-bringing of the present and coming generation.

As a more lucid method of stating our advocacy in this connection, we may take a case in point regarding a stranded vessel, and, after the full evidence has been offered, permit the Court to submit to the experts (nautical assessors) a series of questions, more or less, and according to circumstances similar to the following.

1. What number of compasses had the vessel; were they in good order and sufficient for the safe navigation of the vessel?
2. Were proper measures taken to ascertain and verify the position of the vessel at or about ———; and from date); and was a safe and proper course thereafter steered; and was due and proper allowance made for current or leeway?
3. Were proper measures taken to ascertain and verify the position of the vessel at or about ———; was a safe and proper alteration then made in the course; and was due and proper allowance made for currents or deviation and leeway?
4. Were proper measures taken to ascertain and verify the position of the vessel at or about ——— ; and from time to time thereafter?
5. Was a safe and proper alteration made in the course at or about (give hour and date), and was due and proper allowance made for any aberration in the audibility of sound signals in fog?
6. Was the lead used with sufficeint care and frequency previous to stranding?
7. Was a good and proper lookout kept?
8. Where did the vessel strand, and was she seriously damaged through such strandings?
9. What was the cause of the casualty?
10. Was the vessel navigated with proper and seamanlike care?
11. Was serious damage to the vessel caused by the wrongful act or default of the master, pilot, second officer, or any of them?

A series of questions so altered as to suit the occasion is equally applicable in the case of collision, loss by fire, abandonment, loss of life or other casualty entering into the circumstances of the case.

We venture to affirm that with clear, concise, intelligent answers to the foregoing interrogatories, there would be less strandings on the north shore of Lake Superior and elsewhere.

Shipbuilders are not averse to taking in hand a good heavy job of hull repairs, even to an entire re-construction of the original if so desired. Underwriters, if we are to believe some of the experts, rather glory in a big wholesome general average claim as being a conspicuously advantageous advertisement for their business, and rightly so, too, for when there are no losses there are no claims but numerous losses calls for more policies and premiums, and needless to state the latter stage is preferable to the former.

We have endeavored to convey in the foregoing, the primal fact, born of sheer necessity in the requirement of the times, viz. that the lakes ought to have a properly constituted Wreck Court of Inquiry," and as common parlance would have it, the question regarding the personnel of such a Court is up to the Secretary of the Treasury.

MESSRS. C. S. SWAN & HUNTER, Newcastle, Eng. have launched a pontoon, which is intended for the British naval station at Bermuda. It measures 545 feet over all, with an inside width of 100 feet, while its lifting power is 17,500 tons, so that it will dry-dock the largest war vessel in the British North Atlantic squadron. The dock it will replace was built in 1869, and has a length of 381 feet, an inside width of 84 feet and a lifting power of 8,000 tons. This new dock is larger than the Havanna and Stettin docks, of which so much was heard when they were built. Needless to say the towage of so large and weighty a structure across the Atlantic will be no easy task, though the pontoon will be made as ship-shape as possible for the trip.

ATTENTION is called to the Treasury Decision regarding the carrying of lights on naphtha launches contained in the current issue of the RECORD.

THE CUSTOM HOUSE rummager and searcher is no longer authorized to manhandle trunks, parcels and contents like a railroad baggage smasher. Hon. Leslie M. Shaw, Secretary of the Treasury, scotched an abuse right there and we trust that his instructions will be followed out to the letter. Ordinary every day baggage searchers had become too autocratic and were fast bringing that portion of the Customs service into disrepute, ridicule and general disfavor of departmental practice.

AN INGENIOUS diagram is published by the American Lumberman, showing the sawed lumber product of the states and territories of the United States during 1899, as compiled from the preliminary report of the census of 1900, and also the value of the product in millions of dollars. Wisconsin comes first with a production of 3,400,000,000 feet of sawed lumber, valued at $41,000,000. The second on the list is Michigan, with a production of 3,000,000,000 feet, valued at $36,000,000. Minnesota and Pennsylvania are practically tied for third place, with a slight advantage in favor of Minnesota, whose production is given at 2,300,000,000 feet, valued at $29,000,000. These are the leading states in the lumber business, and there is a long gap between Pennsylvania and the fifth state, Arkansas, whose product was 1,600,000,000 feet, valued at $17,000,000.

THE American Bureau of Shipping occupies in the United States, the same position which the Lloyds hold in England. This company, which is the standard American company, classifies and registers shipping. A yearly book is published by this firm and is known as the "Record of American & Foreign Shipping." It is indispensable in all shipping offices. The bureau supervises the construction of new vessels, approves plans and issues certificates which enables vessels to insure cargoes at the lowest rates. Of American classification societies it is by far the greatest.

SUN TIME AND MERIDIAN TIME.

The difference between standard time and what is known as "sun time" quite often gives rise to singular complications, but the case at Akron, O., is probably the first in which a dispute growing out of it was ever carried to the Supreme Court.

In this case a property owner took out a fire insurance policy at 11:27 a. m., standard time. The policy, however, was dated noon, it being 12 o'clock "sun time." It happened that the building caught fire at the moment the policy was being written, and was destroyed. The insurance company refused to pay the insurance, whereupon the owner brought suit to recover the amount. The Supreme Court decided that as "standard" or meridian time, was legal time in Ohio, the policy was really issued at 11:27 a. m. instead of at noon, and the company must pay the insurance.

In Chicago no such complications could arise for the reason that there is only ten minutes difference between the standard time and sun time. All clocks register the ninetieth meridian time used by the railroads, and generally known as "standard time." But this time is in reality ten minutes behind sun time. In other words when it is exactly high noon by the sun it is 11:50 a. m. by the ninetieth meridian or standard time.

Owing to this slight difference Chicago uses nothing but standard or railroad time, and no one, not even the man in the Auditorium tower, ever bothers his head about sun time.—Ex.

Our contemporary appears to have got hold of some half truths. In mixing up the standard, apparent and mean times there is no allowance made for leap year. Solar, or sun time, is measured by the daily motion of the sun, and is designated as apparent time, and in no other way, this is the most natural and direct measure of time, if we except sidereal time. But, since the intervals between the successive returns of the sun to the same meridian are not equal, apparent time cannot be taken as a standard. Hence, to avoid the irregularity of time caused by the want of uniformity in the sun's motion, a fictitious sun, called the mock or mean sun, is supposed to move in the equator with a uniform velocity. Mean time is the hour angle of the mean sun, a mean day is the interval between two successive transits of the mean sun over the meridian. Mean noon is the instant when the mean sun's hour-circle coincides with the meridian. Mean time is perfectly equable in its increase and at certain times agrees with apparent time; then again it is in advance, at other times behind it. Mean time lapsing uniformly, is measured by the clocks in ordinary use, but it is not the actual, apparent or sun time, by a maximum correction of 16'. The difference between the apparent and mean time is called the equation of time.

It may be judged from the foregoing that standard time, mean time, or so called local sun time, are arbitrary divisions arranged for local convenience, while the real or proper sun time is apparent time, though varying nearly every day in the year.

In this instance it proved a good thing for the assured, that the state legislature of Ohio were enabled to mark and make time even through the heavens rebelled. At the same time, we can leave the man in the Auditorium tower serene in the confidence that he is versed in all the several kinds of time, especially the standard, sun, mean or apparent, sidereal, etc.

IMMENSE TEXAS ORE TRACT SOLD.

The iron ore fields including a great solid body of iron ore known as iron mountain, situated 100 miles north of Austin, in Llano, Burnet and Gillespie counties, have just been acquired by a syndicate of Chicago capitalists who have formed the Llano Iron Milling Co.

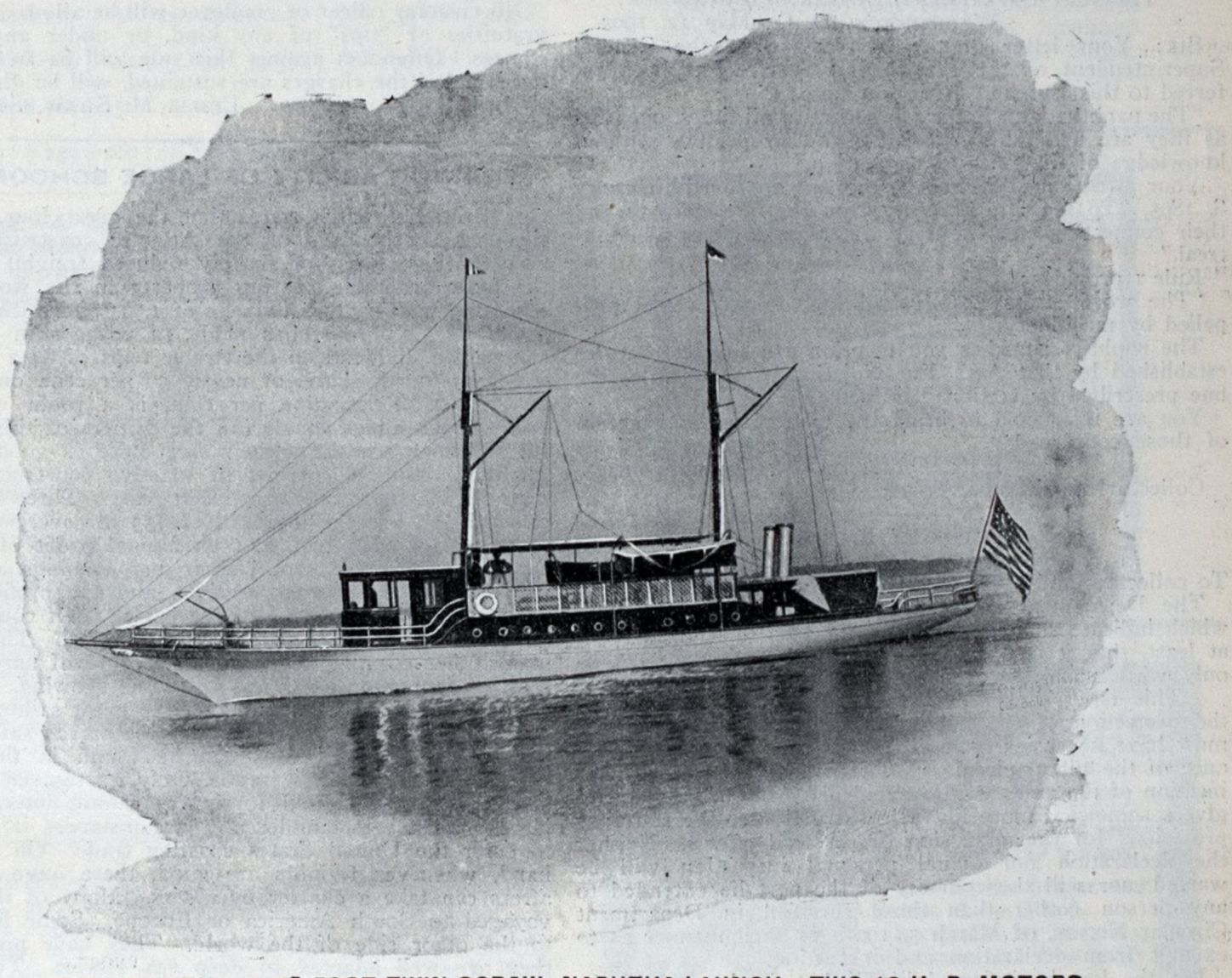
The ore lands embrace more than 50,000 acres. It is stated that they have made a contract with Alabama and eastern iron manufacturers and that shipments will be made via the port of Galveston, a specially low rate of rail and water transportation having been obtained.

These iron ore fields have attracted attention for many years, but owing to their remotenes from fuel and the high transportation charges their development was never undertaken. Collis P. Huntington at one time contemplated taking hold of the project of developing them, and he went so far as to acquire as an individual investment the Austin and Northwestern railroad, which runs from Austin to Llano, expecting to use this line in connection with the industry. He was prevented from carrying out his plans.

MOTOR BOAT BUILDERS TOO BUSY TO EXHIBIT.

United States Consul Frank H. Mason, Berlin, two months ago gave some account of a special international exposition of motor boats and appurtenances to be held near Berlin from June until September of this year, and he urged American builders to exhibit. He says that "the response to this appeal, as well as to the prospectuses and correspondence sent out by the association itself to leading American boat builders, has been disappointing, the general tenor of such replies being that they are all busy with their orders at home, that their whole output for this season is sold, and that they have nothing to spare for exhibition purposes. This may be true, but it is a fair question whether neglect to utilize an opportunity like this will not be a repetition of the mistake which the makers of fire extinguishing apparatus committed, when they failed to exhibit at the special exposition of firemen's appliances held here last year. The one American firm which did exhibit an electric fire alarm system is now puting it in for the city of Hanover, and has under negotiation contracts for similar installations in other German cities

"There is abundant evidence that a good representative American display at the motor-boat exposition this year would be an unusually promising investment for the exhibitors. It is fully understood here that our country is first and foremost in all that relates to the construction and use of motor boats as naval auxiliaries and for pleasure and business purposes. It is also recognized that Germany—the original home of the gas engine—is so far behind in that class of water craft that the field is practically unoccupied. So many inquiries have been received by the committee about probable American exhibits—their tonnage, cost and other details—that there is evidence of a real demand, and the committee states that from all such indications, American exhibitors of standard types of motor boats, engines, etc., would be practically certain to not only sell their entire list of exhibits, but to take numerous orders for futre delivery. Responsible firms here and at the large German seaports are eager to accept agencies to represent American builders, and German machinists will be on the watch to purchase valuable patents in that class. Obviously, all novelties should be patented or registered and the patents applied for before being exhibited anywhere in Europe. It will be many years before another special international exhibition and classified competition of motor boats will be held in this country, and the present opportunity once lost will not soon recur. The committee authorizes the statement that every responsible concession and assistance to facilitate a representative American display will be gladly and promptly acorded. Berlin is the center and mart of a vast system of canals, lakes, and canalized rivers which could be freely navigated by motor boats, where few or none now exist. If American builders will not reach out to grasp an opportunity like this, the builders of other countries—notably Great Britain, France and Belgium—certainly will."



THE CORINTHA, A 76 FOOT TWIN SCREW, NAPHTHA LAUNCH. TWO 12-H. P. MOTORS.

The Corinthia is one of the largest vessels propelled by Naphtha power. Designed and built by the Gas Engine and Power Co., and Charles L. Seabury & Co., New York.

NOT TO CHANGE FLAGS.

The Philadelphia North American states that there is no ground for the fear widely felt in England, that as a result of Morgan's Ocean Trust, the Stars and Stripes would replace the Union Jack on a number of English steamship lines. Our contemporary states that if the British alarmists had the slightest acquaintance with the navigation laws of the United States they would have been saved all this mental disturbance. The granting of American register to the foreign built ships of the merger would involve the abandonment by Congress of the traditional policy of the United States. And it is worthy of note that Mr. Morgan's American partners in the recent shipping deals have been, during the last few years, the most insistent in behalf of the United States shipbuilder and against letting down the bars to foreign built vessels. The North American maintains that patriotism is not at all involved in the ship merger, which is simply a protective movement entered into by all parties concerned with the object of obviating ruinous competition between the several lines.

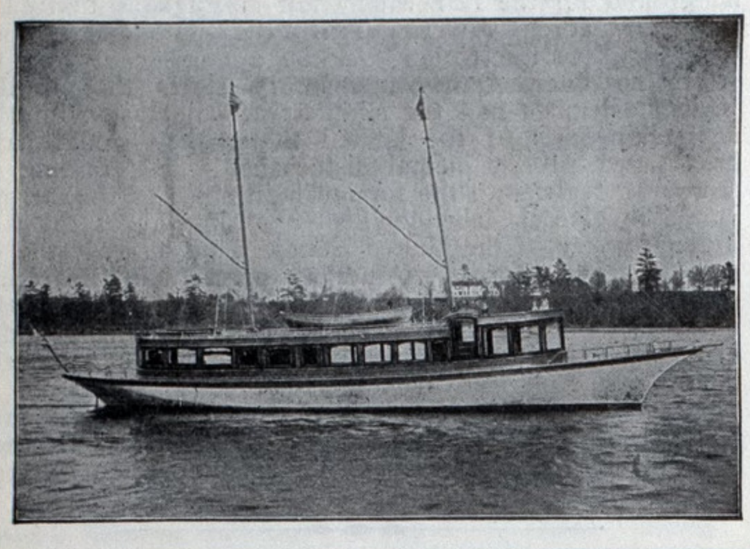
IRON ORE IN WASHINGTON.

The search for iron ore in Washington has not been very exhaustive, and but little time or money has been expended. Ore exists in large bodies and is not confined to any one locality. In the Cle Elum valley there is an immense body within a few miles of the railroad. There are millions of tons in sight of the finest quality and will furnish an inexhaustible supply of steel. At Leavenworth, fourteen miles from the Great Northern, there is another large body which analyzes 75 per cent., and is easily worked. In the Lake Cushman district there are millions of tons, pronounced by competent men as the largest body in the United States. It contains 50 per cent iron and has been examined by experts and pronounced capable of making the finest quality of steel. There is but one blast furnace in the state, that operated at Irondale, which was originally operated from 1881 to 1888. The original product was from mixed ores, and I do not hesitate to pronounce it of fine quality.

The future will place this state in the foremost rank as a producer and manufacturer. With its inexhaustible supply of coal and splendid quality of ore it possesses the richest resources of any state in the union.

The outlook is certainly of a most encouraging character, and the promise for the immediate future is the most auspicious in the history of the northwest, because of the movement now in progress to bring our iron deposits to a state of utilization.

Measure of Damages.—Where an action in damages is brought against the owner and also the master of a steamboat, and it appears that in the transaction out of which the action arose the master was acting in his representative capacity, the owner alone is liable. La Blanc et al vs. Sweet et al., 31 So. Rep. (La.) 766.



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TREASURY DECISIONS.

LIGHTS FOR LAUNCHES.

[Naphtha launches are subject to penalty under section 2, Act of February 8, 1895, if navigated without lights.]

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
WASHINGTON, D. C., May 12, 1902.

SIR: Your letter of the 8th instant. to the General Superintendent of the Life-Saving Service has been referred to this Bureau. In it you state:

"The naphtha launches are a menace at all times, operated as they are without signal lights and by persons without knowledge of the rules of navigation."

Your attention is invited to the Act approved February 8, 1895, "To regulate navigation on the Great Lakes and their connecting and tributary waters as far east as Montreal."

Rule 1 provides:

"The word steam vessel shall include any vessel propelled by machinery."

The naphtha launches you mention are subject to rules established by that Act. For violation of these rules the fine prescribed by section 2 is incurred.

You are instructed to bring the matter to the attention of those concerned. Respectfully,

E. T. CHAMBERLAIN, Commissioner.

Collector of Customs, Toledo, Ohio.

PASSENGERS' BAGGAGE.

TREASURY DEPARTMENT, May 13, 1902.

To collectors and other chief officers of the customs:

The Department is in receipt of a number of letters which indicate an impression, on the part of some persons at least, that it is proposed to examine personal baggage only when suspicion is aroused.

This is erroneous. There must be no relaxation in the protection of the public revenues, and the smuggler must have no easier road to travel than prior to the issuance of the recent circulars. The sole object of the modification of the rules was to avoid petty annoyances and to give a somewhat more liberal construction to the statutory provisions for the admission of personal effects. Neither the declaration nor actual personal inspection will be waived, nor will the courtesy of the port be extended to any person (other than those specified in Department Circular No. 20, of March 5, 1901) in such manner as to exempt from declaration and inspection.

Let the law be enforced kindly but firmly, and let no favoritism be shown in the administration of the customs laws. LESLIE M. SHAW, Secretary.

INSPECTION OF PASSENGERS' BAGGAGE AND EFFECTS.

TREASURY DEPARTMENT, May 8, 1902.

To collectors and other officers of the customs:

The Department has received complaints from persons who have returned to the United States from abroad of alleged discourteous treatment by customs officers engaged in the inspection and examination of personal baggage, and of needless and unjustifiable injury done to the contents of trunks, etc., by rough and careless handling during examination.

Customs officers who may be assigned to duty at passenger landings should exercise great patience and courtesy while engaged in the work of examining baggage. Passengers are not always familiar with our customs laws, and a certain amount of impatience on their part may be expected, but no inspector or officer will be excused for discourteous conduct in return.

Inspectors of personal baggage when on duty should wear clean, white, cotton gloves, so as to avoid soiling articles they may be compelled to handle, and after inspection and appraisement they will carefully re-pack the trunks and packages. Passengers should be relieved of anxiety as far as possible.

The chief officer of the port will detail some efficient person who, in appropriate insignia of office, will be in charge, and to whom may be referred all questions of administration and all complaints.

While customs duties properly collectible under the law must be secured, and intentional violations of the law detected and punished, care must be taken to avoid petty and extortionate exactions under a narrow interpretation of the law and a misapprehension of the purposes of the inspection.

No customs officer or employee will be allowed to accept gratuities or "tips" of any kind, or under any circumstances. Offenders against this rule will be suspended at once, and if the charges are sustained, will be dismissed.

LESLIE M. SHAW, Secretary.

EARNING ABILITY OF LARGE SCHOONERS.

A Boston dispatch states that the great four, five and six-masted schooners of the Atlantic coastwise service, even in these times of sharply reduced freight rates, are the most profitable floating property in the world. One schooner, with a gross tonnage of 1,904 and a carrying capacity of 3,000 tons, has made 12 voyages in 512 days, and paid a dividend on the twelve trips of $442 for every one-sixty-fourth share, or nearly 39 per cent. on her cost of $72,960. Thirty-nine per cent. is a profit which not even copper mines equal, and the owners of this successful schooner now have their ship quite as good as ever, for these modern coasters of massive construction keep their A1 classification for a dozen years. Three other vessels paid an average dividend of $33 for every one-sixty-fourth share each trip, and an annual profit of 27.5 per cent. on the investment. Their net earnings were 42.9 per cent. of their gross receipts, and the profit paid 19 per cent. of the total cost of the vessels. Of course, these instances were more or less exceptional. There were many other coasting craft which, because of hard luck or smaller size, made a far less favorable showing. Yet it is a fact that, as things now stand, the great sailing schooners of the American merchant marine are as safe and attractive an investment as can be found in the United States. Their business is absolutely guaranteed to them. Cheap wage, subsidised foreigners cannot interfere with it. No alien vessel under any circumstances is permitted to enter the United States coasting trade. On the other hand, whenever freights are good, these huge fore-and-afters can take a charter over seas. Many of them have voyaged to South America or Europe. Some have gone to the other side of the world. They have proved that they are well adapted to deep sea service. Twenty-five years ago a full-rigged ship of 2,000 tons was considered a very heavy vessel. But there are now afloat eighteen America, five and six-masted schooners of above 2,000 tons.

EASTERN FREIGHTS.

Messrs Funch, Edye & Co., New York, report the condition of the eastern freight market as follows:

Chartering business for the present week has again been confined principally to timber and deals from the Gulf and British provinces respectfully. The rates obtained do not show any material change, and as tonnage is offering more freely for June-July loading, shippers views are somewhat bearish for vessels in that position. Prompt boats, which, however, are rather scarce, would command a slight advance from Bay of Fundy ports; in all other directions there is nothing of interest to report. A few steamers have been closed on time charter for short trips, there being little disposition on the part of charterers to take steamers for long periods, whilst further coal fixtures to Mediterranean ports have been effected at the rates paid last week.

Business in sail tonnage is without improvement, occasionally a charter is made, but rates in such cases are far from satisfactory. The market can only be described as stagnant with no possibility of a speedy change for the better.

Grain—Liverpool or Glasgow, 3 cents; London, 3½ cents; Bristol, 4½ cents; Hull, Leith or Newcastle, 5 cents.

HISTORY OF NEW YORK STATE CANALS.

At the present time the canal problem of the state of New York is in its fifth stage since its origin in 1768, when Sir Henry Moore, Colonial Governor of New York, proposed improvements of the Mohawk river at Canajoharie, and in 1788, when Elkanah Watson proposed improving the natural channels by way of the Mohawk river to Wood creek, and thence through Oneida lake to the Oswego river and to Lake Ontario. This latter project was so for executed as to give navigation in 1796 for boats carrying sixteen tons from Schenectady westward 184 miles by the water route, or 150 miles in a direct line, to Seneca Falls, on the outlet of Seneca lake, the locks being first of wood, then of brick and finally of stone.

The second step was taken 1808, when the Legislature directed Surveyor-General Simeon DeWitt to cause an accurate survey to be made of a route between the Hudson river and Lake Erie; the results of this survey were under consideration and discussion until 1816, when the canal law was passed authorizing the construction of the Erie and Champlain canals, which were begun in 1817 and completed in 1825; the section to Lake Ontario at Oswego being begun in 1825 and completed in 1828. The waterway of the Erie canal and of the Oswego canal was then 28 feet wide at bottom, 40 feet wide at surface of water, whose depth was four feet, the locks being 90 feet long by 12 feet wide. The Champlain canal was 20 feet by 30 feet wide with 3 feet depth of water and the locks 75 by 10 feet.

The commercial success of this canal was so great that the third step was taken in 1835 when the enlargement of the Erie and the Oswego canals was begun and was completed in 1862, when the dimensions of the waterways were 52½ feet at the bottom and 70 feet at the surface of water, whose depth was 7 feet. The locks were 110 feet long by 18 feet wide, allowing passage of boats carrying 250 tons of freight, and on the Erie canal were built in pairs.

The fourth step was suggested in 1878 when the state engineer in his annual report proposed a further enlargement and briefly formulated what has since been known as the "Seymour Plan," which was to "increase the depth of the canal to eight feet by lowering the bottom in some places and raising the banks in others." This step was further advanced in 1895, when the people of the state voted $9,000,000 to thus increase the depth to nine feet in the waterway and eight feet in the locks and acqueducts, this being now known as the Seymour-Adams plan of 1895.

The fifth step is now begun by reports on the surveys and estimates for a barge canal referred to Governor Odell on February 12, 1901, which was considered by the Legislature at its last session.

At the same time a United States Commission has had in preparation a report and estimates for 21-feet and 30 feet ship canals through the state. Four years of time and $485,000 of money have been used in the preparation of this United States report which was presented to Congress on December 1, 1901.

THE MARITIME WORLD, a monthly journal devoted to the interests and welfare of its title and published at San Francisco, Cal., has been received this month. The periodical is of magazine size, nicely illustrated, containing some excellent articles and all the current marine news collaborated in excellent form and presented to its readers with a typographical neatness and perfectness slightly to be envied. The first issue contains articles on the following subjects: "The Pacific Coast's New Life," "Important Sea Statistics," "Changes at Vladivostock," "Coaling at Barcelona," Mexican Steamship Lines," "The Ship Subsidy Bill," "Lake and Ocean Traffic." We welcome the Maritime World into the ranks of marine journalism. May it have abundant success during a long, worthy and prosperous career.

SUN'S AMPLITUDES.

The following approximate amplitudes of the sun's rising or setting will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the sun's setting. The bearing may be taken when the sun's center is on the horizon, rising or setting. The elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation, or the total difference between compass and true, or geographical bearings.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
May 23	E. 28° N.	= N. 5½ E.	= N. E. by E. ½ E.
May 29	E. 30° N.	= N. 5⅜ E.	= N. E. by E. ⅜ E.

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
May 23	E. 29° N	= N. 5⅜ E.	= N. E. by E ⅜ E
May 29	E. 31° N.	= N. 5¼ E.	= N. E. by E. ¼ E.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
May 23	E. 30° N.	= N. 5⅜ E.	= N. E. by E ⅜ E.
May 29	E. 32° N.	= N. 5⅛ E.	= N. E. by E. ⅛ E.

LAKE SUPERIOR, LAT. 48° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
May 23	E. 32° N.	= N. 5⅛ E.	= N. E. by E. ⅛ E.
May 29	E. 33° N.	= N. 5 E.	= N. E. by E.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly. if to the left, the deviation is westerly.

Fog—Negligence of Tug.—A tug, having in charge eight canal boats in three tiers, tied them up on reaching a pier in the East River at about 1 a. m., to await a favorable condition of the tide before proceeding further. The night was then clear, and the tug left the tow to engage in other work. At 3 o'clock a fog came on, and later in the morning became very dense. The canal boats, when left, tailed down the river with the ebb tide, but when the tide rose gradually swung out across stream, and, while lying thus, about 6:30 a. m., a ferry boat collided with one of the canal boats and injured it. When the fog began to rise, the tug was a very short distance from the tow, and had only two light boats in charge, and could have returned to the tow. Held negligence on the part of the tug, and that it was liable for the injury. Hughes vs. Pennsylvania R. Co., et al., 113 Fed. Rep. (U. S.) 925.

JAMES SPENCE ROBERTSON.

If JAMES SPENCE ROBERTSON belonging to Dundee, Scotland, who was, it is believed, about 1889 in Tawas City, Michigan, U. S., and who was, it is understood, latterly acting as a Steward on a Lake Steamer running out of Bay City, Michigan, U. S., will communicate with the Subscribers, he will learn something to his advantage.

REID, JOHNSTON & CO.,
34 Reform St., Solicitors.
Dundee, Scotland.

TABLE OF DISTANCES

Table of Distances at which objects can be seen at sea, according to their respective elevations and the elevation of the eye of the observer.

Heights in Feet	Distances in Statute or English Miles	Distances in Geographical or Nautical Miles.	Heights in Feet	Distances in Statute or English Miles	Distances in Geographical or Nautical Miles	Heights in Feet	Distances in Statute or English Miles	Distances in Geographical or Nautical Miles
5	2.958	2.565	70	11.067	9 598	250	20 916	18.14
10	4 184	3 628	75	11.456	9.935	300	22.912	19.87
15	5.123	4.443	80	11 832	10 26	350	24.748	21.46
20	5.916	5 130	85	12.196	10.57	400	26.457	22.94
25	6.614	5.736	90	12 549	10.88	450	28.062	24 30
30	7.245	6.283	95	12.893	11.18	500	29 580	25.65
35	7.826	6.787	100	13.228	11.47	550	31.024	26.90
40	8 366	7 255	110	13.874	12 03	600	32 403	28.10
45	8 874	7.696	120	14 490	12.56	650	33 726	29.25
50	9.354	8.112	130	15 083	13.08	700	35 000	30.28
55	9.811	8.509	140	15.652	13 57	800	37.416	32 45
60	10.246	8.886	150	16.201	14.22	900	39.836	34.54
65	10.665	9.249	200	18.708	16.22	1,000	41.833	36.28

EXAMPLE.—A light 100 feet above the water will be visible to an observer whose eye is elevated 15 feet above the water, 15.9 nautical miles; thus from the table:—

15 feet elevation, distance visible, 4.44 nautical miles.
100 " " " " 11,47 " "
15.91

LAKE ERIE LEVELS.

A meeting of the Lockport Business Men's Association has been called to take action relative to the proposed international commission, which is to consider the lake levels question. Lockport is not a lake port, but it is deeply interested in the question which has to do with the maintaining of the lake levels. The surplus water of the Erie canal, created by the operation of ten combined locks, furnishes water for a score of manufacturing establishments 11 months in the year. The municipal water supply for fire protection and sanitary purposes is also taken from the Erie canal, which is fed from Lake Erie. It is understood that there is considerable sentiment here for the appointment of George Clinton, of Buffalo.

Death of Passenger.—Where a girl takes passage on a steamboat, and is drowned upon reaching the point at which she expected to leave the boat in an attempt to transfer her to a skiff, the burden of proof rests on the carrier to show that such occurrence did not result from the fault of his officers or representatives. There is danger in attempting such transfer at night, and whilst the boat is in motion, of which the carrier ought to be aware, and to which he has no right to subject an ignorant and inexperienced passenger; and in so doing he assumes the risk of the consequences, Le Blance et ux. vs. Sweet et al., 31 So. Rep. (La.) 766.

Government Proposals.

SEALED PROPOSALS will be received at the office of the Light-House Board, Washington, D. C., until 2 o'clock p. m., June 6, 1902, and then opened, for furnishing the materials and labor of all kinds necessary for the construction and delivery of the twin screw steel steam light-house tender, Crocus, for a fixed sum for said vessel, delivered either at the Buoy Depot, Buffalo, N. Y., or at the light-house depot, Tompkinsville, N. Y., as will be determined upon by the Light-House Board. Proposals, plans and specifications can be had by applying to the Light-House Board. Washington, D. C., or at the office of the Light-House Inspector, Buffalo, N. Y. Norman H. Farquhar, Rear-Admiral, U. S. N.. Chairman. 2 0

U. S. ENGINEER OFFICE. Jones Building, Detroit, Mich., April 19. 1902. Sealed proposals for dredging, and other work required for removing obstructions to navigation in main ship channel in Detroit river, will be received here until 12 noon, (Standard time), May 19th, 1902, and then publicly opened. Information furnished on application. W. H. BIXBY, Major, Engrs. 17-20

FOR SALE One Air Pump 31 inch diameter, 12 inch stroke, arranged for direct connection, in good condition, taken from S. S. Manitou to be re-placed by a larger one.

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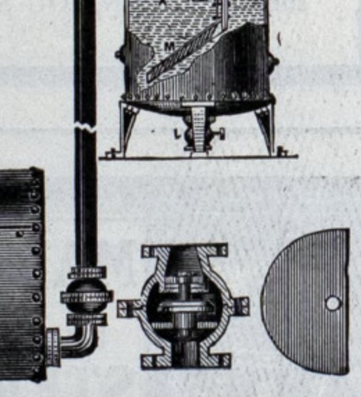

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Minnesota Iron Co.'s steamer Presque Isle.

American Steel Barge Co.'s steamer Alex. McDougall.

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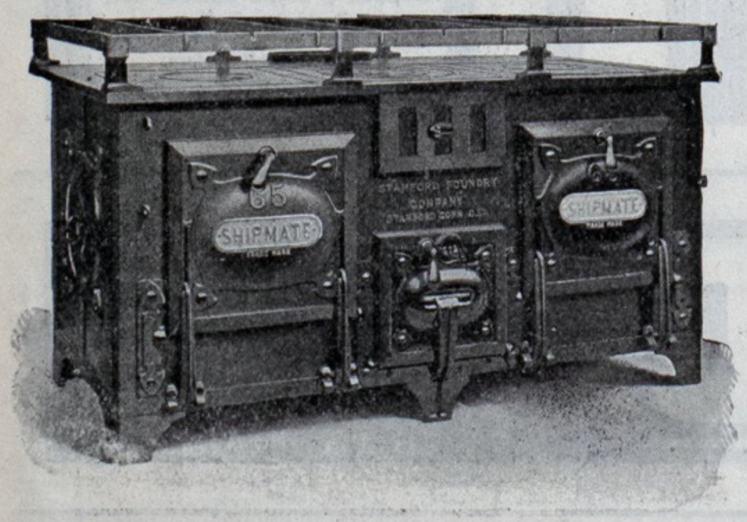

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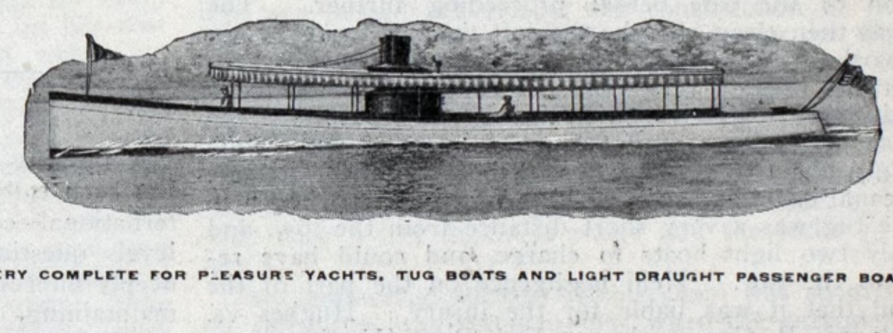

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To get any of these letters, addresses or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Allen, James
Ahlstron, Fred J
Adams, Rollie, Castalia
Allor, Elmer J, Frick
Bigham, Chas, Livingston
Boegert, Aug C, 2 Progress
Bolton, Wm
Bankson, Loney
Brown, D T
Burnes, Harold C
Bewick, Geo
Bush Geo
Bly, C A, Elphick
Blair, Fred
Brainsdon, Chas
Carter, Geo F
Corbishley, Joseph 2
Currie, John M 2
Cornish, F W
Curray, James F, Bangor
Collins, Wm G
Christianson, C, Starke
Coleman, Arthur
Duffie, Carl
Evens, Geo
Evenson, Emil, Martha
Franklin, Jas
Gallarnia, Jas A
Graham, Charley A
Griebling, Wm H
Gunderson, Gus
Hackleman, F
Higgins, Geo
Hanlon, Mark
Hare, A
West, Robt
West, Mrs Chas
Will Herman
Wilson, Chas
Wermer, Ira M
Wing, Geo, J J Hill
Wilcox, Walter, Roumania
Thomas Wm, Gates
Smith, Mrs J 2
Smith, Fred W
Sterling, Wm
Scott, Percy M
Saunders, A H, F B Wells
Regan, Albert
Ryan, J W, City Cleveland
Ross, Chas B, Hope
Robinson, Mrs Wesley
Rayer Math
Roscoe, Eugene
Rosborough, Theo
Rossman, James
Peterson, Capt, Bradley
Poole, Albert, Progress
Palmer, Roy D
Patchen, Geo
O'Mara Michall
Owens, Thos, Corsica
McGarrity, Sam
McClelland, Gill
Mallon, Howard
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Lewis, Ed, Castalia
Kendt, Herman
Joslin, Geo G, Seneca

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Government Proposals.

TREASURY DEPARTMENT, Office of General Superintendent U. S. Life-Saving Service, Washington, D. C., April 26, 1902. Sealed proposals will be received at this office until 2 o'clock p. m. of Monday, the 26th day of May, 1902, and then publicly opened, for furnishing supplies required for use of the Life-Saving Service for the fiscal year ending June 30, 1903; the supplies to be delivered at such points in New York City, Grand Haven, Mich., and San Francisco, Cal., as may be required, and in the quantities named in the specifications. The supplies needed consist of beds and bedding, blocks and sheaves, cordage, crockery, furniture, hardware, lamps, lanterns, etc.; medicines, etc.; paints, oils, etc.; ship chandlery; stoves, etc.; tools and miscellaneous articles; all of which are enumerated in the specifications attached to the form of bid, etc.; which may be obtained upon application to this office, or to the Inspector of Life-Saving Stations, 17 State street, New York City; Superintendent Twelfth Life-Saving District, Grand Haven, Mich.; and Superintendent Thirteenth Life-Saving District, New Appraisers' Stores, San Francisco, Cal. Envelopes containing proposals should be addressed to the "General Superintendent U. S. Life-Saving Service, Washington, D. C." and marked on the outside "Proposal for Annual Supplies." The right is reserved to reject any or all bids, and to waive defects, if deemed for the interests of the Government. S. I. KIMBALL, General Superintendent. 18-19

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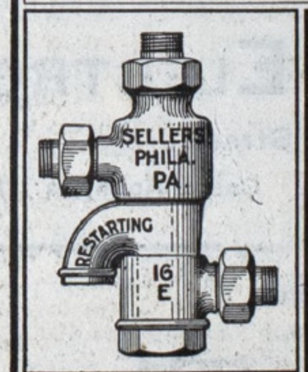

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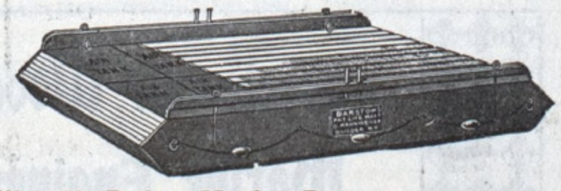

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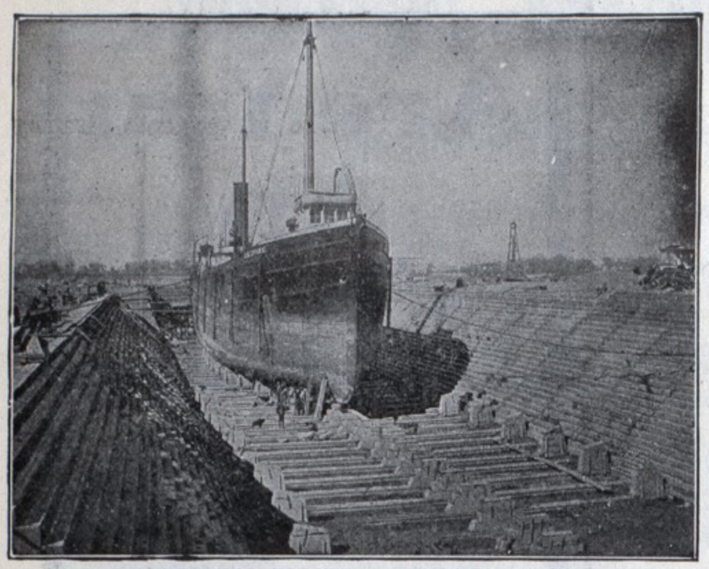

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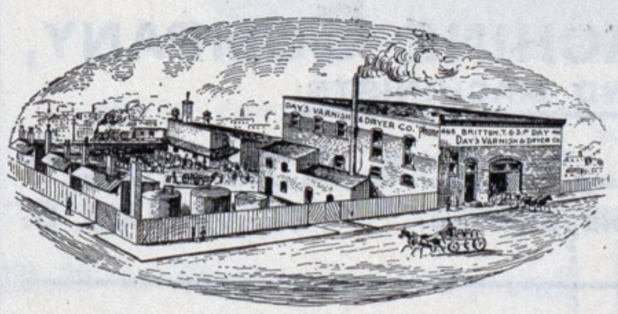

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